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LOGISTICS TRAINING AND ADVISORY TEAMS IN IRAQ

GFEBS: Advancing Sustainers' Capabilities

The Container Management Quandary

Transitioning a Base From Coalition to U.S. Control

Logistics in the Chinese PLA

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Cover: As the Army prepares to reduce its presence in Iraq, one of its most significant tasks is to train the Iraqi Army to manage and maintain its own supply, maintenance, and transportation systems. U.S. logistics training and advisory teams and military transition teams are deployed throughout Iraq to teach Iraqi soldiers how to most effectively complete logistics tasks, like ordering supplies and maintaining equipment. The articles starting on pages 18, 22, 26, and 29 highlight some recent training team missions in Iraq. On the cover, a military transition team Soldier trains a 6th Iraqi Army Division soldier to change out headlight assemblies on a high-mobility multipurpose wheeled vehicle in Kadhimiya, Iraq. (Photo by Petty Officer 2d Class Robert J. Whelan, U.S. Navy)

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ALU's College of Professional and Continuing Education

BY RICHARD W. PRICE

With the opening of the Army Logistics University (ALU) at Fort Lee, Virginia, on 2 July 2009, most of the educational programs offered by ALU's predecessor, the Army Logistics Management College (ALMC), shifted to a new college under ALU: the College of Professional and Continuing Education (CPCE).

The new college, as the home of the functional courses that previously belonged to ALMC, needed an appropriate new name. After thoughtful consideration of a variety of proposals, the name "College of Professional and Continuing Education" was selected for three primary reasons. First, it effectively reflects the college's two central missions: professional development and continuing education. Second, CPCE is also well-suited to represent the college's three core competency areas: logistics, acquisition, and operations research. Finally, the new name closely parallels the names used for similar programs at universities throughout the United States.

The new college comprises four educational departments. The names of two departments were changed from those used in ALMC to more accurately reflect the current nature of their respective courses. All four departments offer courses primarily aimed at Army and other Department of Defense (DOD) civilian employees; however, quite a few courses are equally appropriate for uniformed military personnel.

The Department of Systems Acquisition (DSA) offers courses for acquisition and non-acquisition professionals. Acquisition professionals make up the Army Acquisition Corps and the Army Acquisition Workforce. DSA courses for acquisition professionals are taught at the ALU Huntsville Campus in Huntsville, Alabama. This satellite location is home to basic and advanced education for officers in functional area (FA) 51, acquisition, and for noncommissioned officers (NCOs) in military occupational specialty 51C, acquisition, logistics, and technology contracting NCO. Non-acquisition professionals work in jobs that span the spectrum of civilian and military specialties, but their jobs require them to be involved with acquisition processes. An example of a course offered for these employees is the Contracting Officer's Representative (COR) Course, which is widely viewed by the Army acquisition community as the benchmark for COR training. Courses for non-acquisition professionals are taught at Fort Lee.

The Department of Systems Engineering (DSE) is home to all courses related to operations research and systems analysis (ORSA). It conducts FA 49, ORSA,

education both at the foundation level and for the qualification level of Intermediate Level Education. Civilian employees in Army Career Program 16 (engineers and scientists, non-construction) also receive their basic and advanced education through DSE courses.

The Department of Strategic Logistics (DSL) offers courses aimed at employees whose positions are involved with national- and strategic-level logistics. Under ALMC, this department was known as the Materiel Management Department. The new name more clearly reflects the nature of today's courses, which focus on state-of-the-art management of supply and maintenance from installation to DOD levels. Defense Logistics Agency and Army Materiel Command personnel are typical customers for DSL courses.

The Department of Advanced Logistics Studies (DALS) is home to courses intended for logistics professionals working at the operational level. Within ALMC, this department was known as the Logistics Executive Development Department. DALS is perhaps best known for its Intern Logistics Studies (iLog) and Theater Logistics Studies (TLog) Programs. DALS is also widely known for its courses in joint and multinational logistics and for recent initiatives in the area of interagency logistics.

CPCE plays a large role in professional education for the logistics, ORSA, and acquisition communities. However, many of the college's courses can be readily classified as continuing education, including courses in all three core competency areas. A new ALU initiative for 2010 is to establish continuing education units (CEUs) for applicable courses. [A CEU equals 10 contact hours of instruction in a continuing education program.] Most CPCE courses will be suitable for CEU credit. Efforts are underway to research the CEU evaluation methodologies and accreditation requirements that will be needed to formally establish such a program. The college believes continuing education benefits students by helping them to maintain their professional status and supporting their future advancement. Continuing education of employees is also a measure of an organization's commitment to excellence.

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GFEBS: Advancing Sustainers' Capabilities

BY LIEUTENANT COLONEL KARL E. LINDQUIST
AND CHRISTOPHER LYEW-DANIELS

The General Fund Enterprise Business System is providing a new foundation for how the Army manages and accounts for its money. Financial managers as well as logisticians need to know how GFEBS works and how it will benefit them.

If you haven't heard by now, the Army is in the midst of deploying a new, revolutionary financial system called the General Fund Enterprise Business System (GFEBS). Just how big is it? In the next 2 years, over 79,000 end-users at more than 200 Army financial centers around the world will transition from legacy systems to the more advanced GFEBS.

Processing over a million transactions a day and managing approximately \$140 billion in spending by the Active Army, Army National Guard, and Army Reserve, GFEBS will be one of the world's largest enterprise financial systems. The most appealing characteristic of GFEBS is that it is not just for financial management professionals. Many other users, such as supply and property book managers, engineers and public works personnel, real property managers, and leaders at all levels will use or have an interest in GFEBS.

GFEBS is a web-based, enterprise resource planning (ERP) solution that uses a commercial-off-the-shelf system that allows users to share financial, asset, real property, and accounting data across the Army. Users involved in any of those functions need to pay attention to GFEBS developments because this powerful system will undoubtedly affect many of the Army's current processes. That, in turn, will drive entirely new training programs to ensure that GFEBS is successfully deployed and sustained.

What Value Does GFEBS Add?

According to Colonel Simon Holzman, the GFEBS Program Manager, the objectives of GFEBS are to "improve performance, standardize business processes, ensure a modern capability exists to meet future needs, and provide the Army's decisionmakers with relevant, reliable, and timely information." The value of providing reliable and timely data cannot be overstated and is perhaps the most significant driving force behind the massive transition to GFEBS. GFEBS will allow the Army to generate a complete, auditable financial statement that meets the congressional mandate spelled out in the Federal Financial Management Improvement Act of 1996. The increase in financial transparency provided by GFEBS will improve the Army's credibility and

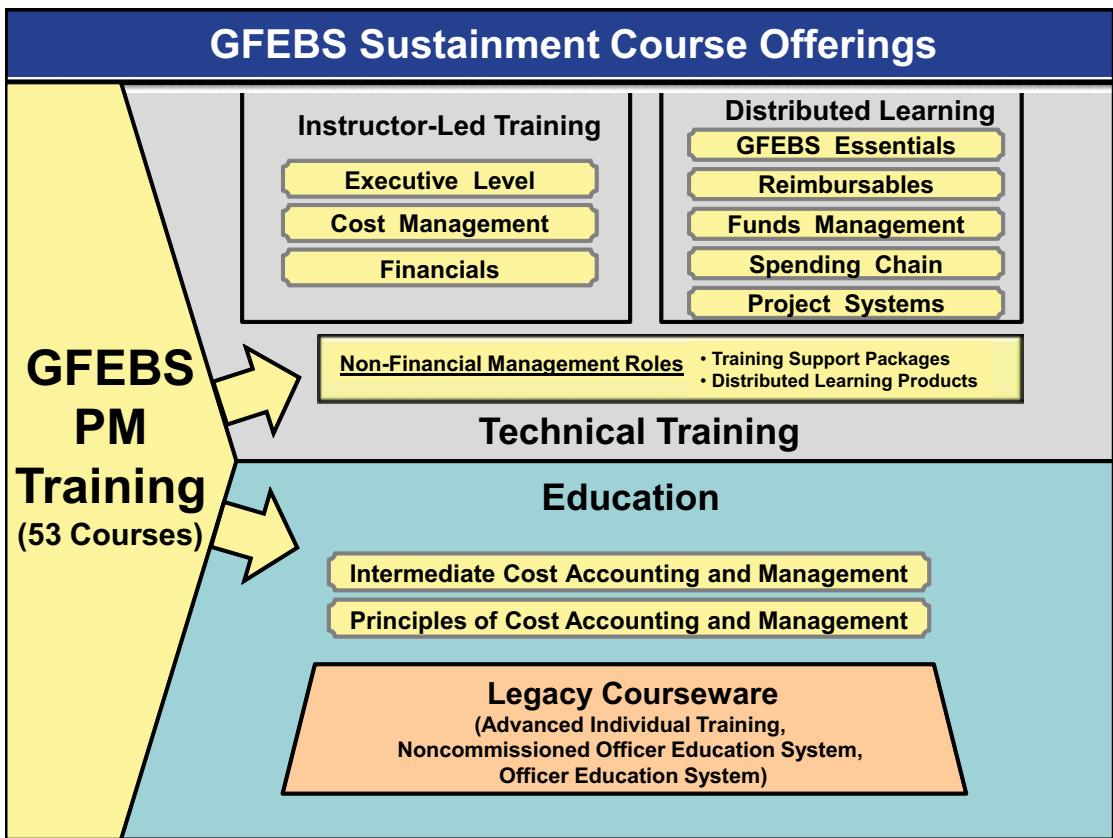
assuredly lead to better relations with its congressional purse holders.

GFEBS has tremendous potential to benefit financial managers, asset managers, accountants, logisticians, and commanders because it offers new and improved capabilities to support the modular, joint, and expeditionary Army. As an ERP tool, GFEBS is capable of sharing common data across multiple agencies and activities. Currently, the Army has more than 100 financial, real property, asset, and accounting management systems; this results in a host of integration challenges. GFEBS integrates over 80 percent of these systems, creating a single, authoritative source for financial and related nonfinancial data for the Army's entire General Fund. Imagine how much more efficient the Army would be if all users had access to the same master data. By using GFEBS, financial management and non-financial-management professionals will be able to devote more time to analyses and less time to processing transactions.

From an end-user perspective, GFEBS significantly decreases the number of manual reconciliations currently being performed; improves the planning, programming, budgeting, and execution process through the use of integrated output data; eliminates cycle times and system customizations; standardizes business processes and input of transactions across the Army to support cost management activities; and provides accurate, reliable, and real-time data. Army financial management professionals also benefit through improved cost management and cost control, increased time to perform financial analyses, and more accurate measurement of the value and location of Government property.

GFEBS Sustainment Training

As the Army continues the unprecedented conversion from its many archaic and sometimes unwieldy automation systems to the superior ERP system that GFEBS provides, the Army Soldier Support Institute's Financial Management School is leaning forward to ensure that sustainment training is available when GFEBS reaches full operational capability (currently scheduled for 1 January 2012).



The Financial Management School is developing eight new GFEBS training courses (top of chart), two new educational courses (bottom of chart), and a full menu of training products for non-financial-management users. The school's strategy is to take the training products generated by the GFEBS program manager for fielding and adapt them to meet both Army Training and Doctrine Command compliance requirements and the needs of specific training audiences throughout the Army.

Understanding the need to have a well-trained and educated GFEBS workforce, the Army Training and Doctrine Command (TRADOC) approved the Assistant Secretary of the Army for Financial Management and Comptroller's request to designate the Financial Management School as the proponent for GFEBS sustainment training. With this designation, the Financial Management School is responsible not only for delineating GFEBS training requirements for financial management processes but also for developing training products for non-financial-management GFEBS users. Through diligent coordination efforts with external agencies, the Financial Management School is developing a GFEBS training strategy that will offer a full complement of training opportunities to satisfy the needs of all GFEBS operators and stakeholders whose participation is required to ensure the system's sustainment.

The Financial Management School is currently gathering GFEBS training products and tools in order to begin adapting them to meet TRADOC requirements. TRADOC-approved training materials will serve as the foundation for creating new Financial

able to train at their own computers at work or receive instructor-led training at the Financial Management School at Fort Jackson, South Carolina. Depending on the popularity of the courses, a mobile training team may be available to conduct GFEBS training at students' duty stations.

Course Offerings

Updating existing legacy courses is a top priority for the Financial Management School. These courses will be the first courses adjusted to introduce the appropriate GFEBS concepts, theory, and terminology. About 82 hours of GFEBS training will be integrated into professional military education, such as advanced individual training, noncommissioned officer and officer courses, and some functional courses. The Financial Management School will ensure that leaders get quality exposure to GFEBS at the schoolhouse so they are not blindsided at their next assignments.

To cover financial management technical training, eight new GFEBS courses will be offered. These courses will provide the mechanics, or "how to" training, that students will need to address the actual

Management School courses related to the school's components of GFEBS and for aligning the school's current legacy courses. The Financial Management School sustainment training strategy will be flexible enough to meet the needs of all activities while providing the rigor and substance needed to ensure that students can grasp the learning objectives.

The Financial Management School will offer both computer-based and instructor-led training. GFEBS students will be

working of various processes in GFEBS. Students will learn how to process transactions, generate and interpret reports, and execute their user roles effectively. Three instructor-led courses (Financials, Cost Management, and Executive Level) will be conducted at Fort Jackson in a classroom environment. Five distributed learning courses (GFEBS Essentials, Reimbursables, Funds Management, Spending Chain, and Project Systems) will be accessed from an employee's computer at work or at home. It is these distributed learning courses that will provide new employees with the essential knowledge and skills they will need to grasp the fundamentals of the business processes in which they will be engaged. An entire suite of courseware is planned for development for non-financial management users.

A Catalyst for Instilling a Cost Culture

In a time of persistent conflict, the Army is increasingly challenged to achieve satisfactory results with fewer and fewer resources. Senior leaders are faced with the monumental task of justifying resource requests when they have only limited transparency of current expenditures, and often they must rely on estimates that can be easily questioned. We can't begin to understand what we need if we can't understand what we've executed. How much does a patrol base cost annually? How much are the annual sustainment costs for a brigade combat team in Iraq? What is the impact of expanding Logistics Civil Augmentation Program requirements?

Resource managers, logisticians, and above all, commanders and directors must be more proactive in instilling a cost culture within their agencies, activities, and units. Leaders must actively identify and manage costs, leverage every dollar expended, and practice good stewardship as a daily function. Cost control must be a routine and deliberate practice—a new way of conducting business in the Army. No longer can we "fire and forget" our resources on high-dollar requirements without conducting followup cost analysis. Data on all of our execution must be captured, logically stored, and analyzed for future decision support information. GFEBS provides the necessary transparency and the capabilities to apply cost management and cost accounting principles.

In the past, the Financial Management School routinely provided cost accounting and management education to the field. However, in September 1992, when the Deputy Secretary of Defense directed the Defense Finance and Accounting Service (DFAS) to assume the accounting and cost mission for the Army, demand for those courses plummeted until they eventually faded into obscurity. The fielding of GFEBS, however, returns the responsibility for cost accounting and management to the Army. To address the educational

shortfall in this vital financial management capability, the Financial Management School is introducing two new courses that aim to infuse a cost culture among junior officers and civilian career program 11 (comptroller) personnel, Principles of Cost Accounting and Management (PCAM) and Intermediate Cost Accounting and Management (ICAM).

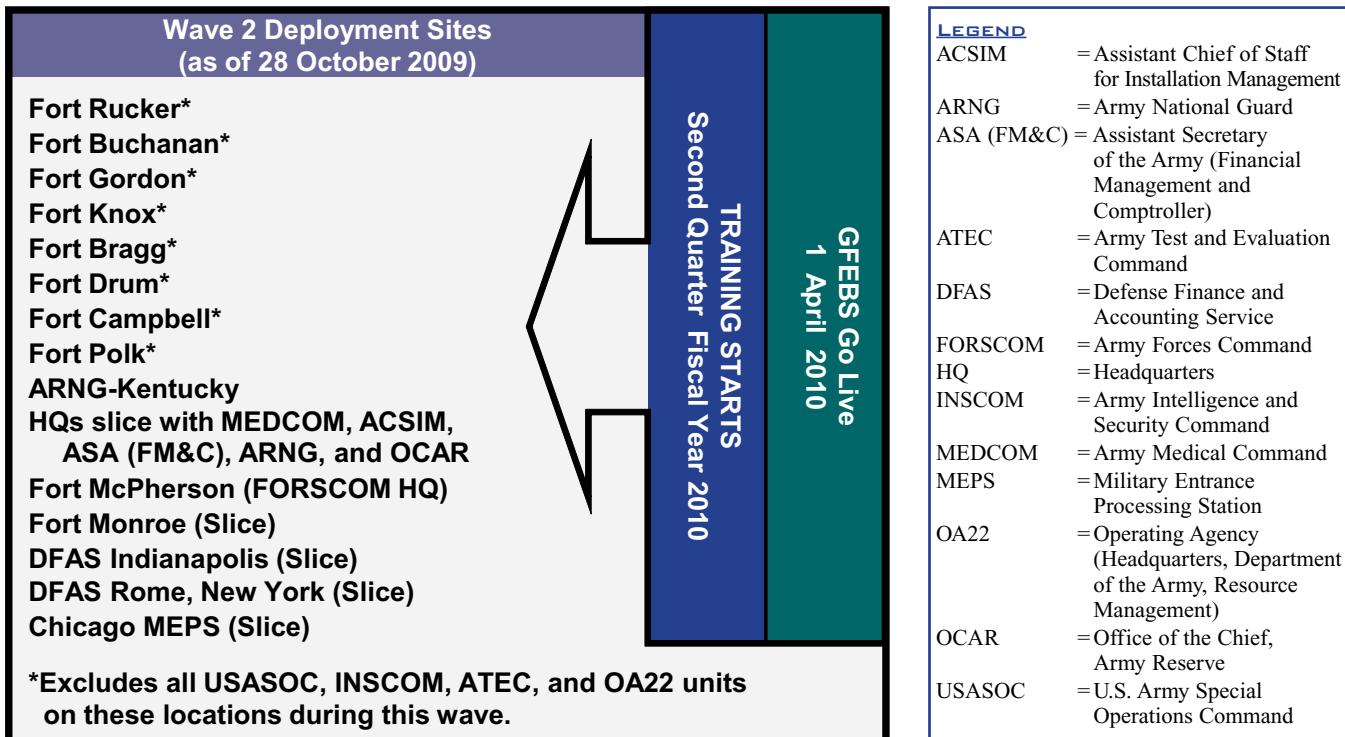
The PCAM and ICAM courses are each 3 weeks long and are designed to focus on the principles and concepts associated with cost accounting and management. PCAM will be the introductory course and will emphasize cost accounting. ICAM will be the follow-on course and will emphasize cost management while introducing relevant case studies. PCAM and ICAM will provide financial managers the cost accounting and cost management principles and skills they need to execute essential cost management support to commanders facing a significantly resource-constrained future. These courses must be developed and implemented quickly as enduring components of financial management educational development.

The GFEBS Connection to GCSS-Army

Many astute "techies" are probably wondering how Global Combat Support System-Army (GCSS-Army) works with GFEBS since logisticians execute a significant portion of the Army's funding for acquiring supplies and equipment. For this reason, a federated approach is being designed that will allow these two powerful ERP systems, GFEBS and GCSS-Army, to coexist and operate with relative autonomy.

The plan, which still needs to be finalized, is for GCSS-Army to adopt the GFEBS financial template as the standard design while retaining the ability to apply various local solution designs in support of its unique tactical supply and repair mission. This federated approach is achievable since both of these ERP systems use SAP 6.0 as their solution platform. As of today, the federated approach includes the following:

- ❑ Division and installation financial managers will push operation and maintenance Army (OMA) funding from GFEBS to GCSS-Army in order to support tactical units, which will then fully manage those funds using GCSS-Army.
- ❑ GCSS-Army will be the financial system of record for tactical units when they are deployed or in garrison.
- ❑ GCSS-Army will support full spend-chain and reimbursable processes.
- ❑ Funds management for travel and training will not be supported within GCSS-Army and will remain in GFEBS.
- ❑ Tactical logisticians will only be required to operate within GCSS-Army.
- ❑ Financial reporting will be integrated across the two systems (GCSS-Army and GFEBS).



LEGEND	
ACSIM	= Assistant Chief of Staff for Installation Management
ARNG	= Army National Guard
ASA (FM&C)	= Assistant Secretary of the Army (Financial Management and Comptroller)
ATEC	= Army Test and Evaluation Command
DFAS	= Defense Finance and Accounting Service
FORSCOM	= Army Forces Command
HQ	= Headquarters
INSCOM	= Army Intelligence and Security Command
MEDCOM	= Army Medical Command
MEPS	= Military Entrance Processing Station
OA22	= Operating Agency (Headquarters, Department of the Army, Resource Management)
OCAR	= Office of the Chief, Army Reserve
USASOC	= U.S. Army Special Operations Command

GFEBS is scheduled to be fielded at the installations and sites shown above on 1 April 2010.

This federated approach will be tested first at the National Training Center at Fort Irwin, California, during fiscal year 2010, when both of these revolutionary ERP systems are scheduled to be fielded there.

GFEBS Fielding Update

GFEBS is being deployed incrementally in “waves” along geographic lines using a regional focus (south-east, northeast, and so forth). Wave 1 deployment included Fort Jackson; Fort Stewart, Georgia; Fort Benning, Georgia; Army Installation Management Command (IMCOM) headquarters at Arlington, Virginia; IMCOM Southeast Region headquarters at Fort McPherson, Georgia; TRADOC headquarters at Fort Monroe, Virginia; Army Forces Command headquarters at Fort McPherson; Headquarters, Department of the Army; DFAS-Indianapolis, Indiana; and DFAS-Rome, New York.

The success of wave 1 deployment set the stage for the global implementation of GFEBS to the rest of the Army. Upon completion of wave 1, GFEBS will be well on its way to replacing the Standard Finance System (STANFINS), the most widely used standard accounting system for Army installations, and the Standard Operation and Maintenance Army Research and Development System (SOMARDS), which is currently used by the logistics and acquisition communities.

Currently, GFEBS is preparing for its next major deployment phase, wave 2, scheduled for 1 April 2010. Wave 2 fielding is summarized in the chart to the left.

GFEBS is now upon us, so buckle your chin straps and get your head in the GFEBS game. Wave 1 deployment is complete, while wave 2 sites are deeply entrenched with GFEBS predeployment training as they prepare for their go-live date of 1 April. Considering the amount of change involved in this long-overdue transformation, it is essential for all future GFEBS users to learn as much as possible about this powerful ERP solution. For more information on GFEBS, log onto www.gfebs.army.mil, or contact the FMS GFEBS director, Lieutenant Colonel Karl Lindquist, at karl.lindquist@us.army.mil, or Chris Lyew-Daniels at christopher.lyewdaniels@us.army.mil.

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Strategic Leadership Competencies Cannot Wait

BY MAJOR AMY L. GOUGE

Modularization has greatly affected the Army over the last several years, particularly through the development and implementation of modified force structures. These modified sustainment force structures put a large amount of capability in the brigade combat team's (BCT's) brigade support battalion (BSB) and forward support companies (FSCs).

Under the old force structure, command relationships in a divisional unit were relatively linear and direct. The forward support battalions and main support battalions provided direct support to their respective brigades, but they were under the operational control (OPCON) of the division support command (DISCOM). Who was supporting who was clear cut, and any support issues requiring adjudication above the battalion level were passed to the DISCOM.

The modified force structures drive the need for leaders to adapt to new doctrine. Along with adaptability comes a requirement for quicker development of certain strategic leadership competencies. Field Manual (FM) 6-22, Army Leadership: Competent, Confident, and Agile, defines strategic leadership as the type of leadership that occurs at the highest levels of the organization. But strategic leadership competencies have now gained much greater applicability down to the tactical level. Because of the modification of sustainment force structures, two of these competencies in particular, communicating and achieving consensus, hold greater relevance in today's operating environment. According to FM 6-22, in order for a strategic leader to achieve consensus, he must use peer leadership rather than strict positional authority to monitor progress toward the desired end state.

The modular structure assigns the BSB to the BCT. This relationship is very clear, and it makes sense for the BCT commander to own his sustainment assets. Coordination between the BSB and supported battalions with regard to the use of FSCs is essential to ensuring mission success and a clear understanding of administrative and training responsibilities. Effective communication, especially among battalion executive officers and operations officers, ensures that the FSCs are fully supported and not caught in the middle of disputes between staff members. If the staff members of these units are communicating effectively through clear and open dialog, issues should not have to be elevated to the battalion commanders or BCT commander.

Higher sustainment commands tend to be more complicated. Sustainment brigades are not under the OPCON of a division. The habitual support relationship does not

exist as it once did with the DISCOMs. In its mission of providing support on an area basis, a sustainment brigade supports a wide mix of units that are often from divisions other than the one with which it is affiliated.

Although a "plug and play" concept is effective for building combat power, the sustainment brigade must deal with the challenges of subordinate units residing at different locations and coming from different components than in a garrison environment. While deployed, the deployment timelines of the combat service support battalions, which are assigned to sustainment brigades, tend to vary. Consequently, sustainment brigades are constantly dealing with changeovers caused by their units' staggered arrivals and departures.

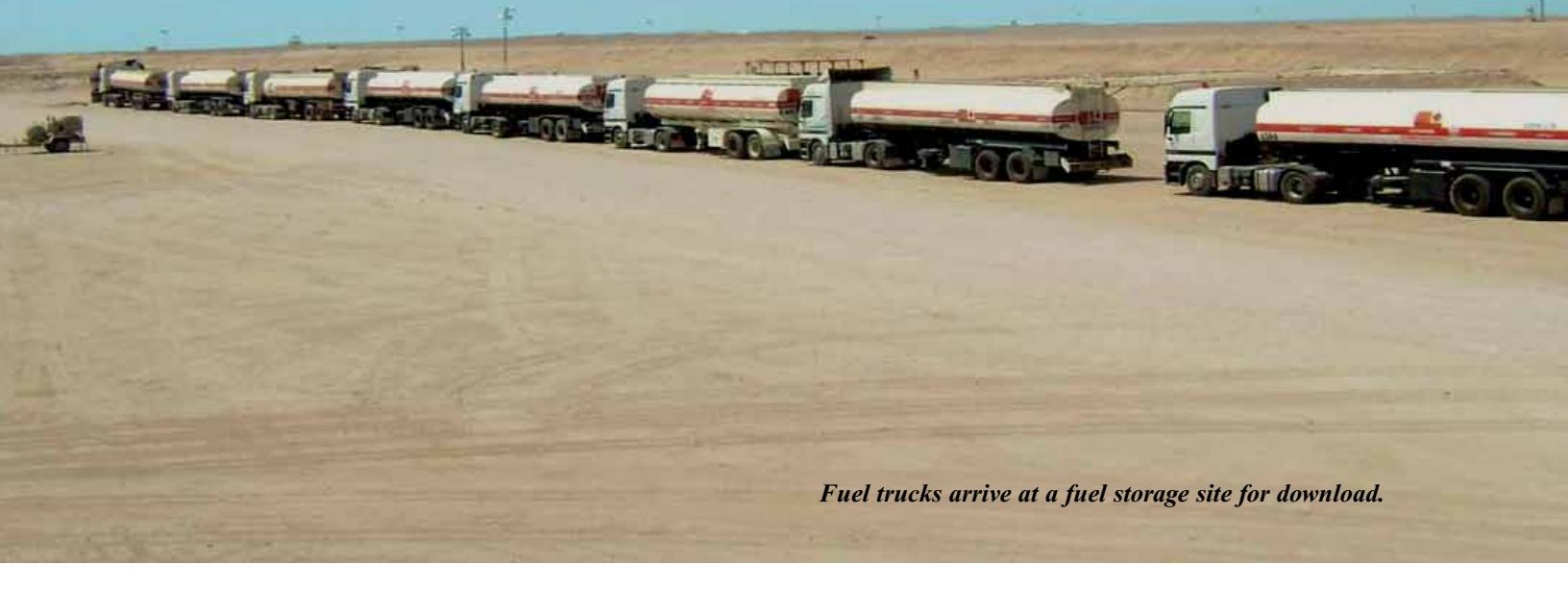
Because of the many different sustainment force structures and the sustainment brigade's area support mission, it is critical to achieve consensus in terms of what support can be provided to the BSBs. The command and control structure creates challenges at times. Support relationships are not as simple as saying "this is who I work for and also who I support" because these entities are very rarely, if ever, one and the same at the higher level. Sustainment field-grade officers especially must work with their peers and senior leaders to achieve consensus so their units receive the requisite support. This requires open communication and an appreciation of each other's missions and requirements. The ability to influence others outside of the chain of command through communicating and achieving consensus is a skill set that should be obtained before reaching the strategic level.

The development and implementation of modified force structures has affected sustainment units' command and control relationships and also the skill sets that are required for field-grade officers to be successful in those units. Although the BCT has a great amount of sustainment capability, competing requirements for external resources require field-grade officers to improve their communication and negotiation skills. Without these skills, mission accomplishment becomes much harder than necessary and, in extreme cases, operations may be hindered. Logisticians must figure out how to work through these sustainment relationships and ensure that the warfighters continue to receive the best support possible.

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OIF Fuel Distribution Challenges

BY MASTER SERGEANT JOHNNY A. CASTILLO



Fuel trucks arrive at a fuel storage site for download.

Since the beginning of motorized warfare, successful execution of fuel distribution has been a major challenge. This challenge remains as great today as it was in World War II. In the beginning of Operation Iraqi Freedom (OIF), one of the biggest successes was the distribution of bulk fuel. Although fuel continues to be distributed successfully, the way it is distributed has changed significantly since the early days of OIF.

Inland Petroleum Distribution System

In the initial stage of OIF, bulk fuel was distributed using a tactical pipeline, the Inland Petroleum Distribution System (IPDS). One reason for the decision to use this system was the shortage of fuel trucks in the area of responsibility (AOR). With IPDS, the Army could issue more than 1.5 million gallons of JP8 per day directly from the Kuwaiti refineries to a fuel farm. More than 90 million gallons of fuel were used in the first 3 months of OIF, 60 million gallons of which were transported via IPDS. IPDS was instrumental to the success of the initial phase of OIF.

Although IPDS proved to be a success, it became apparent that IPDS alone would not meet the requirements when the operation continued longer than initially

planned and the battlefield changed from a linear to a nonlinear battlefield. It also became apparent that additional fuel hubs would be needed throughout Iraq.

In 2003, most of the fuel was stored in Kuwait and transported via an IPDS pipeline to Iraq, where it was delivered to Cedar II, a major hub located in south-central Iraq. From there, it was delivered by truck to other locations. As the battlespace grew, additional hubs had to be established in western and northern Iraq. The distance from Kuwait to the hubs in western and northern Iraq was too great for the Department of Defense to effectively distribute fuel to those locations using IPDS. This shortfall created the need to begin distributing fuel from other sources closer to the hubs in western and northern Iraq.

In the beginning of OIF, only one unit was responsible for overseeing the theater petroleum distribution plan: the 49th Quartermaster Group (Petroleum and Water), which owned the product and the fuel distribution system. However, with the increase in requirements and the OIF battlespace significantly increasing, it became clear that executing the fuel distribution plan would require more coordination and more Logistics Civil Augmentation Program capability.

Defense Energy Support Center

Increased storage and distribution requirements created the need for more coordination with strategic partners and other services. The Defense Energy Support Center (DESC), the executive agent for fuel distribution, provides the policies, contract administration for delivery, accountability, and quality assurance of Department of Defense bulk fuel to the AOR. The U.S. Central Command (CENTCOM) Joint Petroleum Office plans and coordinates the receipt, storage, and distribution of bulk petroleum product for the CENTCOM AOR.

The Sub-Area Petroleum Office (SAPO) is the single point of contact for bulk fuel inland distribution in the CENTCOM AOR. The SAPO mission is to work with other agencies to ensure all actions coordinated are validated according to the Joint Petroleum Office's

Turkey delivers fuel to northern Iraq, and Jordan delivers to western Iraq. Fuel requirements in south and central Iraq continue to be supported from Kuwait. Currently, Kuwait provides 57 percent of the JP8 requirement, Jordan provides 28 percent, and Turkey provides 15 percent. Each ground line of communication (GLOC) executes its fuel distribution in unique ways since all GLOCs face different challenges, such as geography, truck availability, or political influences. Currently, the most challenging GLOC of all provides support from Turkey. This GLOC is the most unpredictable and has the longest vehicle turnaround time, which varies from 14 to 24 days. To meet the requirement, the Turkey distribution network requires more vehicles than both Jordan and Kuwait. By contrast, the average turnaround time from Kuwait is about 6 days.



Fuel storage site supporting fuel distribution operations in the CENTCOM area of responsibility.

petroleum plans and priorities. The 1st Theater Sustainment Command at Fort Bragg, North Carolina, interfaces with DESC, the CENTCOM Joint Petroleum Office, and SAPO to plan, coordinate, and distribute bulk petroleum in the CENTCOM AOR.

The current Iraq theater fuel supply plan has a daily requirement of 1.7 million gallons of JP8, 274,000 gallons of DF2, and 31,000 gallons of mogas. Bulk fuel storage capacity has grown from 8 million gallons of JP8 in 2003 to the current 40 million gallons of JP8, 8 million gallons of DF2, and 1.9 million gallons of mogas. This fuel is stored in a combination of four general service hubs, six direct service hubs in Iraq, and two hubs in Kuwait.

Although bulk fuel distribution remains as much a challenge today as it did in the beginning of OIF, it continues to be successful. The petroleum community has come together to execute a plan. Daily coordination takes place between strategic agencies and operational and tactical commands. In 2008, more than 1 billion gallons of fuel were successfully distributed in support of OIF.

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The Container Management Quandary

BY MAJOR DARRYL R. WEAVER, USAR

Containerization of cargo has been instrumental in increasing supply-chain velocity in both the military and commercial sectors. Although transload efficiency has increased exponentially since containerization was introduced more than 5 decades ago, the current management processes and procedures have created a near-crisis for logisticians in the U.S. Central Command (CENTCOM) area of operations.

The U.S. military has become dependent on the greatly enhanced transportation efficiency offered by containerization. Army logisticians, however, are reluctant to acknowledge that the fluid and sometimes unpredictable nature of land warfare makes container management, accountability, and tracking problematic. Logistics managers must realize that if they fail to make changes to the current container management system, a container shortage may be imminent.

To maintain the current level of sustainment efficiency within the CENTCOM area of operations, some critical changes must be made to the container management system. If implemented effectively, these changes could also significantly reduce the costs of replacing thousands of “lost” containers.

History of Containerization

In 1959, the commercial shipping industry was loading and unloading an average of 0.627 tons of cargo per man-hour, according to Matson research. By 1976, with containerized shipping well-established, that figure skyrocketed to 4,234 tons per man-hour. The exponential gains in container management efficiency during the 1960s and 1970s did not go unnoticed by the U.S. military. The capability of moving more cargo farther and faster made perfect sense to the military, which had become more involved in sustaining global engagements.

By the time the United States became involved in the Vietnam War, containerization had become an extensively used logistics method of operation. Combined with the development of automated supply-ordering systems, containerization of cargo accelerated the movement of supplies through the logistics pipeline from continental United States installations and depots to overseas units and depots.

In 1965, the Army and Air Force jointly owned almost 200,000 containers. Every major Army unit moving into Vietnam carried its accompanying spare parts and supplies in containers. The demand for containers increased as the conflict escalated, and eventually, the

Southeast Asia theater inventory exceeded 75 percent of the containers then owned by the Army and Air Force.

The 150,000 containers in theater represented about 6 million square feet of covered storage. This figure is impressive when compared to the fact that only about 11 million square feet of covered storage had been built in the entire Southeast Asia theater by mid-1969. These containers also satisfied a wide variety of Soldier, unit, and support activity needs for convenient and readily available storage and shelters. U.S. forces often used containers as dispensaries, command posts, post exchanges, and bunkers. Few of the containers moved to Southeast Asia were ever returned to the United States.

Throughout the post-Vietnam era, cargo containerization continued to be an integral component of support to globally deployed U.S. forces. Containers offered a low-cost, easily sourced method to build the logistics footprint, increase sustainment velocity, and reduce transportation support and manpower requirements. In August 1990, for Operation Desert Shield, the Army again widely employed cargo containers for a massive military buildup and deployment.

During Operation Desert Storm in 1991, about 40,000 commercial and Special Middle East Ship-
ment Agreement containers were sent to Southwest Asia. The shipping was relatively easy; determining the contents of containers was not. About half of the containers had to be opened and manually searched or inventoried to ascertain their contents. Many were never even opened. Supply requests went unfilled or had to be submitted multiple times, degrading the readiness and operability of the requesting units.

After Operation Desert Storm in 1991, the rapid evolution of logistics automation systems led to improvements in container content identification and distribution. These improvements permitted the transition from “iron mountain” logistics to a leaner, smarter “just in time” system, which eliminated the time-consuming act of opening containers at the port. These developments, combined with the use of coordinated land operations along ground lines of communication, significantly increased the military’s ability to transport and position supplies to sustain deployed forces. Containerized cargo made logistics support and sustainment operations more precise, flexible, and far-reaching.

Current Operational Picture

Containerized cargo enters the Operation Iraqi Freedom (OIF) theater through both the commercial Port



Units often keep containers to store materiel. This creates a shortage of containers for transport and costs the Department of Defense additional funds to purchase or lease containers to transport materiel to and from the theater.

of Shuaikh, Kuwait, and the military seaport of debarkation (SPOD) at the Port of Ash Shuwaiba, Kuwait. From the ports, ground and air transport are used to move containerized cargo to the warfighter.

Annually, an average of 11,000 containers are received at the commercial port, transloaded from carrier-owned to Government-owned or -leased containers, and moved by convoy or contracted barge to the supply support activities (SSAs) and forward operating bases (FOBs) within the Iraqi battlespace. A system of 10 empty-container collection points (9 in Iraq and 1 in Kuwait) receives, processes, updates automated records of, and recirculates containers through a road network covering an area roughly the size of Texas. Deploying units arrive in theater at nearly the same time as their containerized and heavy organic equipment, which is efficiently moved with relatively few problems from the port to the training and staging areas and from there to the FOBs and SSAs in theater.

Container Shortage

Although the container management system was well conceived and well planned, the U.S. military is experiencing an increasing shortage of containers within the Southwest Asia area of operations. This shortage stems not from low aggregate numbers of containers but from a low availability of containers caused by poor container turn-in and accountability and the use of containers for functions other than moving cargo. The incorrect use of containers is creating a shortfall where a sufficient supply of containers would be expected to be available for circulation.

Approximately 11,000 containers are required annually to transport sustainment resources in Iraq and Kuwait. Today, containers arriving at the SPOD may be identified by radio-frequency tracking devices. Information on container consignees is known before shipments arrive. Container managers and users are given appropriate access to the equipment tracking system to

observe the movement of convoys transporting containers from the SPOD to the FOB. With an average of 11,000 containers entering the theater annually, we would expect to see empty containers numbering in the thousands at each collection point once the contents have been removed from them. This, however, is not the case.

Container Management System

As with every commodity and resource owned or employed by the U.S. military, accountability is paramount when it comes to containers. The Army had solved the problem of how to efficiently transport and track (through radio-frequency identification devices) containers, as well as how to identify containers and their contents. The challenge that still faced military logisticians was how to eliminate the unrestricted disposition of containers. To deal with this problem, the Army developed the Integrated Booking System-Container Management Module (IBS-CMM). This system is currently the primary electronic management and tracking tool used to account for containers.

IBS-CMM allows logisticians to track containers on a digital database. Every time the containers are moved, logisticians can add or remove the identification numbers of the containers at an identifiable physical location. This process is called in-gate/out-gate. When done consistently and reinforced by a physical inventory, IBS-CMM can provide near-real-time tracking of each container's location and its dwell time at each location.

The problem encountered by military logisticians using this container management system was the difficulty in enforcing the in-gate/out-gate procedures. Lack of timely data input and the accumulation of data-entry errors over the past 6 years have made data in IBS-CMM inaccurate and unreliable.

Today, IBS-CMM lists about 120,000 records for containers at sites in Iraq and Kuwait. However, when duplicate numbers, missing data entries, and undocumented exports of containers from theater are factored in, the database may have as few as 60,000 to 80,000 valid records. A 2008 Lean Six Sigma team analysis of this problem, using IBS-CMM data, showed error rates of the sampled container site population as high as 81.6 percent, with an average error rate of 23 percent.

Container management experts from the 1184th Container Management Element (CME), deployed from May 2008 to May 2009, were assigned to clean up inaccurate IBS-CMM data in the OIF theater. The 1184th CME worked day and night to correct inaccuracies in the database so container numbers and site information would be reliable. The CME's goal was to update and maintain accurate records by enforcing the in-gate/out-gate procedures. The cleanup process

was tedious and progressed slowly. The CME, working with limited staff to undo 6 years of poor data management practices, successfully identified more than 20,000 false or duplicate records.

Container Accountability

When automated accounting and inventory management systems are used effectively, containers are accurately tracked by number and location. So why is the relatively simple in-gate/out-gate tracking process not properly enforced? Containers are not diligently processed because container users do not think containers are items that require proper tracking or accountability procedures. This mindset is perpetuated by the categorization of containers as class II (general supplies), which are viewed as relatively low-cost, expendable, common-use assets. In short, users of nonassigned containers are not being held accountable for proper container disposition.

Transport equipment is annotated on unit property books and individual hand receipts. But containers are often not placed on property books and generally are accounted for only when issued to a specific unit or installation support activity. Otherwise, no particular entity accounts for them. No maintenance support activity is responsible for repairing or restenciling them. They are common-user assets and can be used without assigning any accountable or responsible parties.

Trucks, trailers, and materials-handling equipment are usually under the control of an assigned operator. They have maintenance schedules, property book entries, and hand receipt holders. If a piece of equipment is lost or damaged beyond fair wear and tear, the responsible party can be held financially liable. Containers, on the other hand, are procured and managed under a program in which many different individuals, units, and support activities use them. Each user has no more or less accountability and responsibility for the containers than the others. No existing requirement adequately assigns accountability and responsibility to the many users of nonassigned containers.

Containers Versus Warehouse Storage

During the Vietnam War, 150,000 empty containers provided approximately one-third (6 million square feet) of the required 17 million square feet of covered storage space. The 11,000 containers annually put into circulation in the OIF theater are supposed to be available only for transloading and recirculation in sustainment operations. However, as in Vietnam, a similar need for warehouse space also exists in the Southwest Asia theater. Of the 60,000 to 80,000 containers that may currently be available in the OIF theater, a large number are being used for storage by numerous units and contracted logistics support activities, thus effectively removing them from circulation.

Military units and contracted operators in theater need the readily available storage capability provided by containers to perform their missions. Contractors avoid the cost of building warehouse space by using the “free” container storage space. A 20-foot container is a preconstructed facility with 160 square feet of floor space. This amount of warehouse space would cost \$13,120 to build, based on the U.S. national average cost of \$82 per square foot, or \$160 per month to lease. A 15-month, continuous lease of 160 square feet of space would equal the cost of a newly purchased container. By using containers, the U.S. military avoids the capital cost of warehousing. But when containers are used as warehouse space, they can no longer fulfill their intended purpose as mobile transport assets.

As the OIF theater matured and hundreds of units rotated in and out of theater, operational priorities shifted and so did materiel requirements. Military logisticians had to adjust to meet the theater’s changing need for supplies. Existing unused Army supply stocks in theater, however, remained. Unused class II, IV (construction and barrier materials), VI (personal demand items), VIII (medical materiel), and IX (repair parts) items pushed from SSAs to end-users throughout the areas of operations were not retrograded. Where could the U.S. military store 6 years worth of excess, nonexpended, and possibly under-accounted-for supplies and materiel in theater? These items are likely to be found in thousands of containers at camps and supply points in Iraq and Kuwait.

In November 2008, a Lean Six Sigma team studying the problem of container shortages in theater sampled a pool of 1,433 containers to determine their dwell time. Although the sampled containers were identified as being available for transloading and continuous circulation, 68 percent, or 972 of them, were found to have been at their present locations for more than 180 days. The estimated time for containers to move from Kuwait to Iraq and back after offloading should not have exceeded 40 days. This led the study group to conclude that many of the containers transported to Iraq, like those in Vietnam, had been transformed into warehouse space.

Although the need for storage space is increasing, warehouse construction is restricted by host-nation governments, which do not allow the U.S. military to create a permanent presence or permanent structures in most locations. At U.S. camps in Kuwait, military activities are expressly prohibited from building permanent facilities. Similar restrictions for the creation of a permanent U.S. military footprint are in effect in Iraq.

The use of containers as storage space also grew out of increased logistics support to supply larger military forces deployed to the theater. In March 2003, the U.S. military contracted supplies for only

50,000 troops for 180 days to support OIF. Today, the Logistics Civil Augmentation Program (LOGCAP) support contract is sustaining a force of more than 200,000 personnel across the full spectrum of operations. The LOGCAP sustainment contract has been in effect for 6½ years in theater. However, despite steadily increasing logistics support and storage requirements, U.S. forces continue to operate under a plan in which no permanent structures will be built to meet the growing need for warehouse space in Kuwait and Iraq.

Recommendations for Change

To maximize the availability and circulation of cargo containers in OIF and minimize the cost of replacing these valuable assets, we must improve and enforce the system under which containers are currently managed. The four recommendations listed below can help ensure that we maintain an adequate supply of available containers in circulation in theater. If implemented, these recommendations could significantly reduce the likelihood of a potential container shortage.

Institute stronger enforcement of in-gate/out-gate procedures. The automated container management system, IBS-CMM, is sufficient, available, and in place in the theater for container managers. But the system is only as good as its users make it. High data-input accuracy rates must be enforced to ensure that the data are valid. Data in IBS-CMM reports should be verified by physical inventories. CME staff must ensure that all system users are sufficiently trained on inputting data. They also must conduct periodic quality control checks to verify data input accuracy.

A quarterly or cyclic container inventory schedule should be developed at all container collection sites. This action would provide an updated count and verify the location of all containers at each collection site. It would also help ensure that container site data are reliable so container managers can monitor container circulation rates, movement, and usage in supporting sustainment operations. Accurate container counts would also produce reliable data on available containers, enabling the development of valid projections for any necessary container replacements.

In-gate/out-gate procedures and container-use policies should be clearly spelled out and disseminated to military and contractor users. For contractors, the contract scope of work language should also address financial penalties for failure to comply with container management policies and procedures. Contractors should also be assessed a current market value fee for leasing Government-owned containers, thus encouraging minimal use of containers for storage space. Contractor compliance should not be difficult to achieve since the Government can enforce contracts or not renew contracts based on noncompliance.

Information on rules for container use, enforcement of the in-gate/out-gate procedures, and policies for the appropriate use of containers must also be conveyed to military container users to gain their compliance with container policies and disposition requirements. Compliance by military users may not be as easy to enforce.

Track Government-owned and -leased containers by satellite. Satellite tracking as a means for managing containers would not replace the IBS-CMM system. However, along with cyclic inventory physical inspections, satellite tracking would provide a versatile method of verifying container locations. When containers are moved into remote locations, satellite tracking provides an immediate means of pinpointing their locations in real time.

Using satellite tracking to provide in-transit visibility of sustainment cargo has advantages over the interrogator radio-frequency tracking network. Satellite tracking does not rely on containers crossing certain known points, and when logistics sites shift to better support units engaged in military operations, satellites can track containers without relocating the interrogator tracking devices. Interrogator equipment can become a target for enemies seeking to disrupt supply operations by destroying or damaging it, and this equipment can mark our main supply routes for the enemy.

Satellite readers or tags from commercial vendors can be purchased for as little as \$150 per tag, adding about 6 percent to the cost of each container purchased. If the cost increase is determined to be

prohibitive for every container, a smaller supply of tags could be purchased and affixed to containers before transloading and movement. Once affixed, the tags would relay container locations until removed. The removed tags could be affixed to other containers scheduled for movement.

The satellite tracking data on container movements could also be used to update the IBS-CMM data or as another means of checking data in the system.

Assign accountability and responsibility to container users. Unassigned containers are currently tracked as aggregate numbers of units available for use, rather than as individual equipment items that have lifecycle use. Assigning accountability and responsibility to container users would significantly increase the container manager's ability to reclaim cargo containers. Accountability assignment would require that all Government-owned or -leased containers be added to a unit's property book or hand receipted to a designated user. The property book may be a regional or unit property book or a separately developed property book linked to the military transportation asset provider, the commercial carrier, the movement control battalion, or the CME. These organizations should have justification or authority for container ownership or control.

The organization most likely to develop a separate property book for container accountability would be an enhanced CME. Hand receipting containers and requiring the hand-receipt holders to follow inventory procedures would document each container.

Air-supported structures can provide stable storage space at a lower cost than permanent structures, are easily transported, and do not give the impression to the host nation that U.S. forces are there to stay permanently.



Accountability records would enable container managers to know how many containers are put into the distribution network and how many containers come out of the distribution network on a monthly basis. Without assignment of accountability and responsibility, it is hard to know which containers are re-entering the pool, how long they take to circulate, or where the choke points in the distribution network are found.

Data on assigned container use, including road distance moved, the time to travel from the port to the FOB and back, and container dwell time, could greatly benefit container managers. More importantly, assignment of accountability and responsibility would give container managers the authority to enforce the container use policies designed to ensure that containers are not "lost" in the system and are more likely to be returned for reuse.

Obtain contractor- or Government-provided mobile warehouses. The Lean Six Sigma team's container shortage analysis revealed the team consensus that the U.S. military is experiencing not so much a container shortage as a storage space shortage. Containers are being "lost" to use as storage space. This is consistent with how containers were used in Vietnam.

With information on theater container usage, the U.S. military can plan for adequate storage space to support sustainment operations. Military planners anticipate sustainment needs and may build in excess stocks to ensure supply shortages do not become war-stoppers. Having excess stock, however, leads to a greater need for storage space.

A lack of fixed storage facilities increases the likelihood of containers being converted into warehouse space. The OIF theater needs mobile, compartmentalized storage facilities that offer a maximum volume of temporary storage space. Air-supported structures could fill this need and have several advantages:

- ❑ At \$15 per square foot for construction and erection, air-supported structures would cost approximately 80 percent less than conventional, permanent structures.
- ❑ Military-owned and -warehoused air-supported structures can be ordered and received in as little as 6 weeks.
- ❑ Air-supported structures are easily transported; a 60,000-square-foot structure can be transported on five standard pallets, with four pallets for the structure materials and one pallet for the fan assembly and power unit.
- ❑ After use, the air-supported structure can be taken down, decontaminated, and repackaged for shipment, storage, and reuse.
- ❑ Air-supported structures do not require significant ground preparation or equipment for installation, and no sheet metal, concrete, or skilled labor is required.

- ❑ Maintenance and repair of the fabric is done with a patch and a heat gun.
- ❑ The structures are durable, have a lifespan of 20 years, can withstand 130-mile-per-hour winds (with arrester cabling assemblies), and will stay inflated with large tears.
- ❑ The structures have a low operating cost because power is provided off-grid by the organic generator and the fabric the structures are made from is translucent so artificial light is not needed during daylight hours.

The use of air-supported structures can be justified and required in a contract performance work statement either requiring a contractor to procure one or requiring the contractor to use one provided by the U.S. military.

As temporary facilities, the air-supported structures would help reassure the host-nation government that the U.S. military does not intend to be a permanent presence in the country.

Containerization of cargo has enabled exponential increases in transloading efficiency, greatly enhancing logistics support to combat operations. However, poor management of existing container assets could cause significant container shortages in the near future. To avoid this problem, military logisticians must improve container management procedures for tracking container movements, accurately recording container location data, assigning container user accountability and responsibility, and ensuring that containers are employed within the scope of their intended purpose. Another way to reduce container losses would be to procure and set up convenient, temporary, portable, cost-effective, and reusable warehouse space to adequately meet the theater's expanding need for supply and materiel storage.

In today's fluid, unpredictable environment of land warfare, military logistics operations must be capable of moving cargo farther, to more locations, and more rapidly into theater than ever before. In this effort, cargo containers play an important role in the support of global military operations. Mobile, durable, and reusable, these assets are critical to the current logistics capability of the OIF theater and should be carefully conserved in order to effectively continue sustaining the warfighter.

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The 10 Things Warrant Officers Need To Know About ARFORGEN

BY CHIEF WARRANT OFFICER (W-4) RICHARD C. MYERS, JR.

If Army Force Generation (ARFORGEN) is the process of the future, what do warrant officers need to know about it to be successful? I recently sent out a request for information on the Warrant Officer Net website (part of the Battle Command Knowledge System) to capture the warrant officer's perspective of ARFORGEN. Specifically, I requested information on ARFORGEN education, issues, challenges, solutions, and resources. As expected, my fellow warrant officers provided me with plenty of solid information. Thank you to those who answered my priority information request.

ARFORGEN is a model for how the Army intends to man, educate, fund, source, equip, train, and deploy cohesive units and individuals. The model is a way to synchronize operational requirements with predictable force availability in a rational, methodical process. For Active Army units, it entails a 36-month lifecycle program where the operational requirements are predictable so that families can benefit from greater stability. When ARFORGEN is completely functional, it will take the speculation out of when units will deploy.

Based on the feedback I received from Warrant Officer Net and my personal experiences, I have identified the 10 things warrant officers need to know about ARFORGEN.

1. Know That ARFORGEN Is Here to Stay

As warrant officers, we must recognize that ARFORGEN is relatively new and that it will naturally experience growing pains. That means we have to get past its deficiencies and make a conscious effort to identify and take advantage of opportunities to improve the process. The Army continuously updates or modifies policies, procedures, and capabilities to improve the efficiency and effectiveness of the ARFORGEN process. As technical experts, we warrant officers have a unique opportunity to improve the model, so let us focus on how we can make it work rather than why we do not like it.

2. Understand the Commander's Assessment

A unit progresses through the force pools based on the commander's assessment that the unit has achieved specific training proficiency and capability levels. The commander's assessment (with approval from the higher headquarters) establishes a unit as trained, equipped, and manned to meet capabilities designated by the commander. Warrant officers serve as advisers

to commanders at all levels, and commanders depend on our honest assessment. We must make a conscious effort to ensure that the commander has the necessary information to make educated decisions, and for that reason, we have to take an active role in understanding the assessment process.

3. Obtain Information

Warrant officers should gain situational awareness and, more importantly, situational understanding of the Army Posture Statement and the intent of the ARFORGEN process. We need to educate ourselves and acquire as much information as possible. It is critical that you do the legwork and identify key players and capabilities. Make an effort to meet the contractors, civilian employees, and military members who affect the process on your installation. Those contacts have an enormous amount of information that they are willing to share. Using this information will streamline the process and ultimately make your unit's progression through ARFORGEN much easier.

4. Expect Personnel Shortages

The fact that the Army is involved in war and insurgency on two fronts has a detrimental effect on manning the force. Until things slow down, it is reasonable to assume that during the early stages of the ARFORGEN cycle, your unit will face significant personnel shortages. Soldiers of all ranks will leave the unit to change duty stations, complete their military service, attend professional military schooling, or retire. Commanders depend on warrant officers to be creative, adaptive, flexible leaders who overcome difficulties. Seek alternative methods to accomplish your mission until you achieve the appropriate force makeup. Make use of the close bond among warrant officers to establish a professional relationship with the division-level human resources technician (a fellow warrant officer). Yes, personnel gains are the S-1's responsibility, but use your contacts to monitor the status of incoming personnel.

5. Plan Accordingly

The timing of senior Soldiers arriving undoubtedly will not correspond with key-leader planning cycles, midgrade noncommissioned officers (NCOs) likely will not be present for individual or collective training, and junior Soldiers will not be present for gunnery training or field exercises. You will field equipment and receive

new equipment training even though the proper military occupational specialties for those tasks are not adequately available.

Overcoming these obstacles requires a significant effort on your part to synchronize events. Use your role as an adviser to work with the commander, executive officer, and S-3 to stress the importance of aligning training to the arrival of key players. By doing so, you are taking responsibility and making an extra effort to contribute to the readiness and survivability of your unit.

6. Play an Active Role in Equipment Fielding

Warrant officers administer, manage, maintain, operate, and integrate the Army's systems and equipment across the full spectrum of Army operations. Without a doubt, your unit will receive equipment from more places at one time than you ever thought possible. You will receive reset equipment, lateral transfers from within the installation, lateral transfers from external sources, and new equipment. As a technical expert, you are an invaluable resource in managing reset operations. It really is your responsibility to be onsite serving as the commander's eyes and ears. In fact, the commander is depending on you to provide him with an honest assessment of personnel and equipment readiness.

7. Be the Continuity Within the Unit

Soldiers will likely begin their time in a unit with one command group and finish their time with a completely different one. A typical commander's tour length is 2 years. When you couple that with 12-month assignments for executive officers, S-3s, and support operations officers, units often lack stability. Starting over can be painful, but it emphasizes the importance of the warrant officer who provides the continuity between commands.

Warrant officers are invaluable because of their willingness to master their role and gain situational awareness and situational understanding. The commander will seek key players within the organization, and because of warrant officers' active role in equipment fielding and understanding of the commander's assessment, the commander will depend on them to catch him up to speed. A warrant officer can help tremendously by serving as a key intermediary between outgoing and incoming commands.

8. Train Your Team and Build Relationships

If Army leaders truly expect to operate effectively and efficiently during the ARFORGEN process, they must establish cohesive teams, units, and organizations. Establishing a team that strives for common objectives encourages Soldiers to take pride in their accomplishments and enables leaders to maximize resources. The role of Army leaders is to build a team of well-trained Soldiers who are fully prepared to deploy and fight together. The ability to create group commitment is a

critical ingredient to the solution that offsets many of the difficulties associated with ARFORGEN.

9. The Process Will Remain Compressed

As long as we have war and insurgency on two fronts, we will experience a compressed cycle. I am confident that the Army will continue to push new equipment to units and reset as quickly as possible. However, a 36-month cycle may not be possible until the drawdown in Iraq and the force adjustment in Afghanistan are complete. I highly recommend that you remain proactive and begin the planning process while deployed. Capitalize on the opportunity to include ARFORGEN reset and training in the plan.

10. Empower Your Noncommissioned Officers

I personally love to think that I can accomplish everything on my own. In fact, most warrant officers believe they are one-person wrecking machines, but we can all use the assistance of a good NCO. Always ensure that your senior NCOs are integrated into the decisionmaking process.

When used correctly, NCOs can play a significant role in synchronizing personnel, equipment, and training. Once you provide NCOs with a clear intent, authority, and the resources necessary to accomplish the mission, take a step back and have confidence that the objective will be met. Use your NCOs to prepare, research, coordinate, and execute tasks relevant to the ARFORGEN process. NCOs accomplish critical missions day in and day out, and it is our responsibility to effectively use their abilities.

Commanders depend on warrant officers to be creative, adaptive, flexible leaders who overcome challenges associated with successful mission accomplishment. This even holds true for dealing with ARFORGEN's growing pains.

As the Army's technical experts who administer, manage, maintain, operate, and integrate the Army's systems and equipment across the full spectrum of Army operations, warrant officers have a responsibility to ensure that the commander has all of the necessary information to make educated decisions. I challenge my fellow warrant officers to continuously participate in creating and maintaining a database of information regarding the challenges, solutions, and resources available that will ultimately improve the ARFORGEN process.

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Transitioning a Base From Coalition to U.S. Control

BY MAJOR BRIAN LESIAK

Changes in the Iraqi operational environment prompted the renegotiation of security agreements between the Iraqi Government and coalition forces. The outcome of these negotiations led to the redeployment of more than 17 coalition national forces positioned throughout Iraq. Although most of the countries supporting Operation Iraqi Freedom redeployed without the need for replacement, some departures inevitably created a security or political void that had to be filled by U.S. military forces. The transition of control from coalition to U.S. forces and the associated shifts to new geographic locations triggered a cyclic process of requirements identification, mission analysis, course-of-action development, and continual refinement in the logistics community.

This article examines the planning and execution behind two examples of transition from coalition to U.S. control: the transition of the Korean-occupied Zaytun base in northern Iraq to the 3d Armored Cavalry Regiment and the British-occupied Basra base in southern Iraq to the 10th Mountain Division during the period from October 2008 through March 2009. It also explores the major events leading to the transition of Zaytun and Basra, including the establishment of a joint planning team, building of planning estimates, synchronization of the plan through to its execution, and purchase of coalition equipment. The lessons learned from this experience can be applied in the Afghanistan campaign and in future operations that involve coalition partners.

However, even with the most disciplined approach to planning for a major transfer of control, it is impossible to foresee every possible constraint, limitation, or risk that will be encountered during the period leading up to the actual transition. Flexibility, teamwork, and communication will always be essential for a smooth transition and successful operation.

Joint Planning Team and Synchronization

Depending on the size and complexity of a force transition, it may be beneficial to initiate a logistics-focused joint planning team (JPT) to coordinate staff estimates and manage activities ranging from purchasing coalition equipment under the relevant acquisition and cross-servicing agreements (ACSAs) to establishing new service contracts. The composition of the team can vary depending on a number of factors, but the intent will remain the same: achieving a syner-

gistic approach to the transition that is based on a clear understanding of the commander's intent and that is supported by planning estimates that tie requirements to capabilities. Our experience in the Multi-National Corps-Iraq (MNC-I) C-4 with the Koreans at Zaytun and the British at Basra differed because the Basra operation was more complex. The following lessons are primarily based on the planning effort associated with the Basra transition.

The JPT for the Basra transition was relatively large and included representatives, action officers, and planners from the MNC-I and 10th Mountain Division C-4/G-4, C-3/G-3 air sections, legal offices, C-8/G-8, and C-7 (engineers); the Logistics Civil Augmentation Program (LOGCAP); Joint Contracting Command Iraq (JCC-I); U.S. Air Force; 3d Expeditionary Sustainment Command (ESC) support operations office; coalition forces; ACSA staff; and others, such as classes III (petroleum, oils, and lubricants) and V (ammunition) subject-matter experts, depending on the focus areas covered. The intent was to build synergy into the planning process and collectively cover each key area leading to the transition.

The JPT primarily relied on video-teleconference capabilities to coordinate with British forces in Basra; however, sub-working groups used the Microsoft Breeze tool on the Secure Internet Protocol Router Network (SIPRNET) to further develop and refine the transition plan in a small-group setting. (Microsoft Breeze is a voice-capable collaborative program that allows users to share PowerPoint presentations.) Multiple site surveys were conducted to improve coordination and, when applicable, meet with contractors and other support elements to address concerns in real time.

Planning Estimates

Once the commander's intent is clearly defined, solid planning estimates in support of the operation build the foundation for a successful transition. In planning for the transition of U.S. forces into Basra, the key areas of sustain, move, equip, arm, fix, and fuel became the cornerstones for tying requirements to capabilities. Requirements were overlaid on these key areas, and capabilities were developed and executed based on what was needed for mission success. For example, the ESC positioned a forward logistics element, which contained a small maintenance support

team and a movement control team, to operate a multiclass breakpoint for supplies pushed from a nearby supply support activity. A number of base life-support contracts also were developed and awarded to cover base operating requirements and support of logistics support areas.

The transition to Basra highlighted one area in particular where developing planning estimates, requirements, and capabilities posed a challenge. That area was airfield operations, which became mired in a political struggle, contract changes, interservice support questions, and an overall difficulty in determining what was truly needed to accomplish the mission. During the British occupation, a fully functioning airfield—complete with air traffic control; crash, fire, and rescue; and aerial port and passenger terminal personnel—was maintained in support of British forces. Early in the planning cycle, the C-3 air section, in coordination with the 10th Mountain Division, provided a decision brief to the MNC-I chief of staff with options for how the U.S. transition into Basra Airfield could be supported.

The chief of staff determined that the air traffic control and base operations functions should be supported by U.S. military personnel through an official request for forces (RFF) and that the remaining requirements, such as aerial-port cargo loading and unloading, should be provided by a contractor. This solution appeared to be both simple and executable. An RFF would be submitted for an air operation battalion to perform air traffic control functions, and KBR would manage the other airfield services under the LOGCAP III contract.

The RFF for the air operation battalion was submitted and, after several months of staffing, was approved by the Secretary of Defense. However the plan to contract out the other airfield services through LOGCAP III began to unravel. Under a national-level policy shift, the LOGCAP contract was converted into LOGCAP IV, which was designed to inject competition among three main service providers. As the statements of work were being redone, a subsequent decision was made to remove LOGCAP IV as a sourcing solution. This change forced another edit to the statements of work as the contracts were shifted to JCC-I for sourcing.

This period of turmoil consumed considerable time and began to affect the ability of U.S. fixed-wing aircraft to bring cargo and supplies to the airfield. When three U.S. aircraft were turned away because of a lack of cargo offload support, it was clear to the JPT and senior leaders that an immediate stopgap solution was required to provide aerial port capability until an enduring JCC-I contract could be established. In an attempt to gain support, two indirect measures were taken. First, an informal request for assistance

was submitted to U.S. Air Forces Central (AFCENT). Second, the airfield planning estimates (the projected number of fixed-wing landings and their estimated cargo) were briefed to the U.S. Central Command (CENTCOM) Senior Logistics Round Table.

These two indirect measures, coupled with a number of key engagements with leaders (specifically, a general officer steering committee brief that included the MNC-I chief of staff and the Air Force air component coordination element), led to a decision that a formal RFF would be needed for AFCENT to deploy a contingency response element into Basra and provide temporary military support to operations. This course of action was pursued and ultimately provided the temporary capability needed at the airfield. However, the original planning estimates were called into question on numerous occasions. These estimates, built at the onset of planning, became instrumental in showing senior leaders that, without immediate support, the mission would continue to be degraded until the JCC-I contract was established.

The key lesson learned in the Basra scenario was that planning estimates need to be demanded and captured at the onset of a U.S.-coalition base transition. Having solid estimates allows the JPT to build on the foundation of the commander's intent, frame the challenge, and resource the proper capabilities to perform the mission. To avoid confusion and duplication of effort, the estimates must be agreed upon at the JPT level and be strongly supported by senior leaders. Once estimates are solidified, backward planning can be used to provide the mile markers and decision points on the road to a successful transition. Should the plan deviate, the estimates will provide the backing for contingency plans, such as an RFF or other temporary stopgap solutions.

Managing Execution

During the planning of the Basra transition, it became increasingly clear that the environment in Iraq was changing and that MNC-I was starting to see the first hints of the approaching terminal stages of Operation Iraqi Freedom. This placed a greater focus on the fiscal aspects of the transition and on the RFFs submitted to support the operation. Managers of a transition must recognize the impact that the political environment, the stage of a conflict, future plans, and other enablers within the operational environment can have on the timing of the transition. The following are lessons learned about managing transition timing.

RFF. Requests for additional troops and equipment received increasing scrutiny. Cross-leveling was used when possible. For example, the theater fire chief identified and tagged crash, fire, and rescue equipment within Iraq for cross-leveling to Basra. Without these assets, a tremendous amount of time and resources

would otherwise have been tied up in negotiations to obtain critical equipment.

The “Golden Rule” of support. Support to operations began with an internal look at what could be accomplished by military forces. If troop labor could not perform the mission, JCC-I contracting was requested, with LOGCAP as the final support alternative. The initial plan for the Basra transition relied on LOGCAP contracts; this was changed when it was identified that LOGCAP did not meet the intent.

Know your battle buddies. Understanding what our fellow Soldiers, Marines, Airmen, and Sailors could bring to the fight was essential to facilitating operations. Air Force Red Horse (civil engineer) personnel provided a tremendous amount of construction support, while the Air Force’s air component coordination element, director of mobility forces, and air mobility liaison officer provided subject-matter expertise on airfield operations.

Retrograde support to coalition forces. Even a highly capable coalition partner, such as Great Britain, may require retrograde assistance. This should be a planning assumption up front, even if such assistance is not requested in the months leading up to the transition.

Demilitarization of coalition ammunition. Research conducted by the MNC-I C-4 class V officer showed that it would be more cost-effective to demilitarize most of the coalition ammunition rather than prepare it, pack it, and retrograde it out of country. British ammunition was shipped to another location for destruction, which saved time, money, and transportation resources.

The second order effects of new contracts. New contracts require a vetting and badging process for the contract employees. Ensuring that a biometrics team is established and can handle the amount of local contract personnel in the time allotted is fundamental to meeting a contract start date. It is important to note that, unlike LOGCAP, establishing contracts through JCC-I increases the need for contracting officer’s representatives.

Facilities renovation and modification. While their facilities were not necessarily better or worse than the current U.S. “sandbox standard,” our coalition partners in Zaytun and Basra lived and worked under different conditions than U.S. forces. Modifications to areas such as the dining facility and billeting were required to meet requirements for U.S. forces.

Acquisition and Cross-Servicing Agreements

Two significant ACSA requests were planned in conjunction with the departure of the Korean and British forces. The associated plan for transferring each base to U.S. control contained unique aspects in approach, planning, and execution.

In response to the Korean departure from northern Iraq, U.S. forces positioned themselves to fill in the area. Multi-National Division-North (MND-N) coordinated with Korean forces to identify equipment needed to facilitate the U.S. assumption of control of Zaytun. The items requested by MND-N were relatively limited in scope and primarily centered on power generation equipment and miscellaneous tents and shelters. During the planning process leading up to the acquisition of Korean equipment, the term “reverse ACSA” was coined to represent the concept of buying equipment from another country instead of the typical scenario in which the United States sells equipment, supplies, or services to another nation.

After extensive planning and coordination with corps and division ACSA representatives, plus support from U.S. Army Central (ARCENT) and CENT-COM, the final plan developed was relatively simple. First, the Koreans would inform the corps of the dollar amount they originally paid for the items requested. Next, a U.S. team composed predominately of logistics and engineer subject-matter experts would conduct a site survey to inspect the equipment and apply a standard depreciation model to the items; if both parties agreed on the value, they would then proceed with the transaction. Finally, the equipment values would be compiled on a spreadsheet, attached to a standard form CC35 (acquisition request), and placed into the staffing process, with ARCENT as the final approval and funding authority. Executing this basic plan took considerable time, and the redeployment date of the Korean forces ultimately became so constrained that the Koreans opted to donate the equipment without cost.

The assumption of Basra from the British was vastly greater in scale and involved a larger force transfer than replacing the Koreans at Zaytun. The equipment requested for purchase from the British by Multi-National Division-Center (MND-C) was also significantly greater than that of Zaytun and took a different path through the acquisition process. British leaders developed a massive spreadsheet known as the “Compendium” that outlined every item of equipment they would offer for sale. The Compendium included multiple tents in logistics support areas (LSAs), power generation equipment, dining facility equipment, bulk fuel equipment, and other support items.

The planning for this purchase was extensive and drew more scrutiny than the Korean transaction. The British used a special team to arrive at the dollar amounts that factored in depreciation for the Compendium. This eliminated the need for a U.S. team to calculate depreciation and negotiate a final cost. However, the first rendition of the Compendium only provided dollar amounts associated with groups of equipment, such as “Tent LSA–Alpha cost XX dollars.”

It did not provide a line-item cost listing for each item (tent, generator, shelter) within the group. This became a point of contention.

During the planning process, key fiscal and legal challenges began to surface. First, it was determined that the total dollar amount per item could not exceed \$500,000. This posed a problem because the British had not provided a line-item cost listing. Second, it was determined that a “major end item” could not be purchased under ACSA, which led to a debate over what constituted a major end item. Finally, justification of the need for the equipment was challenged by MNC-I C-8, primarily because a large volume of items were requested for purchase without a supporting plan showing detailed requirements.

To overcome these challenges, the MNC-I C-4 deliberated with the XVIII Airborne Corps staff judge advocate (SJA), ARCENT, and CENTCOM to arrive at a consensus. The British were asked to reexamine the original Compendium listing and arrive at line-item cost listings in order to validate that no single item exceeded the \$500,000 price cap. Through negotiation and senior-level engagement, the British complied with the request and provided the detailed information. The result was that each item was valued under \$500,000. The corps SJA provided legal guidance and a written deposition that the items requested did not meet the criteria of a major end item. Finally, justification for the equipment became increasingly clear over time. Without this equipment, MND-C’s transition to Basra would have been significantly hampered, resulting in either a slow transfer or a transfer at a potentially higher cost.

The process developed for this acquisition activity varied slightly from the Korean model in that the finalized package would be staffed through the Joint Facilities Acquisition Review Board process and up to ARCENT for final approval in the form of a Super Coalition Acquisition Review Board package. Along with a completed CC35, a division letter of justification was required in the final package.

Achieving a Successful Reverse ACSA

Although the ACSA requests for Korean and British equipment varied in scope, cost, and process, certain elements remained true for both scenarios. The following six rules for a successful reverse ACSA were captured during the planning:

- 1. Start the planning early.** Equipment identification, inspection, pricing, and documentation will consume considerable time and manpower.
- 2. Involve the staff at all levels.** Having division and corps legal representatives, C-8/G-8 personnel, and logisticians involved from the onset of planning will increase situational awareness and pay dividends as the process unfolds.

3. Utilize ARCENT and CENTCOM. These two commands will not only provide guidance, they ultimately will control the funding. Questions and concerns need to be resolved at the onset of the process, and keeping them informed of the plan will help ensure a smooth transition. As with rule 2, involve them early and keep them aware as situations change.

4. ACSA does not equal a “going-out-of-business sale.” Too many times, the term “garage sale” or “fire sale” was used in conjunction with our plans to purchase coalition equipment. Having a solid plan that accounts for requirements and briefing it to key leaders will minimize the perception that a unit wants to buy every item offered.

5. A “good deal” does not equate to need. This rule ties to rule 4. Simply because equipment is being offered at a minimal price does not mean that it is truly needed for the mission. Each echelon must share fiscal responsibility, and every attempt should be made to cross-level U.S. assets to fill a requirement.

6. Solicit outside agency support. Depending on the type, amount, and location of the equipment to be purchased, assistance may be needed from theater property book personnel to properly inventory, catalog, and bring to record the items requested. These personnel must be included in the plan to properly synchronize the effort.

Planning and executing the logistics of a coalition forces drawdown and subsequent transfer of the operational environment to U.S. control is both an art and a science. The mission blends the essential ingredients of clear intent, mission analysis, rock-solid estimates, and course-of-action development and timely execution with the constraints of time, money, and resources at the tactical through strategic levels. The logistian finds himself switching hats between city planner, mediator, recordkeeper, facilitator, and decisionmaker. Pushing and pulling information through the gauntlet of contracting agencies, legal dispositions, fiscal battles, and bureaucratic staffing often transcends service and government lines. The ultimate lesson learned is to keep your eyes on the prize and hold on for a bumpy ride!

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Logistics Training and Advisory Teams: A Concept in the Making

BY MAJOR MICHAEL F. HAMMOND

Field Manual (FM) 3–24, Counterinsurgency, says, “Success in counterinsurgency . . . operations requires establishing a legitimate government supported by the people and able to address the fundamental causes that insurgents use to gain support.” Developing and maintaining a strong host-nation security force is the key to success for such a government. That government’s legitimacy is then developed and strengthened by its ability to deal with basic issues such as developing infrastructure and local businesses. A strong host-nation security force allows the government sufficient room to grow and deal with the serious issues that plague an emerging and struggling democracy.

Coalition forces in Iraq and Afghanistan are successfully helping the host nations develop their security forces. The basic training and modernization of security forces in these countries is producing forces capable of engaging and winning against insurgent forces. In the complex environment of Iraq, training the Iraqi Security Forces (ISF) presents a huge challenge to coalition forces. The dichotomy of social issues, such as sectarian divisions and tribal and family affiliations, requires astute military planners at the brigade and battalion levels to form partnerships capable of understanding these issues and building responsive teams. The success of coalition force partnerships is determined by the ability of the chain of command and military planners to recognize the power of such social issues and their ability to determine the course of growth within the host nation’s security forces.

Partnerships in Iraq

During Operation Iraqi Freedom (OIF) 07–09, the 2d Brigade Combat Team (BCT), 101st Airborne Division (Air Assault), established a successful partnership with the 6th Iraqi Army Division (IAD). Through its partnership efforts, the 2d BCT supported the 6th IAD’s tremendous growth. Brigade planners developed a brigade-level ISF planning cell that coordinated the efforts of 14 military transition teams (MiTTs). Staff-level partnerships were developed from the ISF battalion levels to the 6th IAD staff and commander. The 2d BCT battalion staffs mentored and trained their Iraqi Army counterparts daily in areas such as intelligence, operational planning, soldier training, administrative procedures, and personnel management.

The logistics system is critical to the success of any army. In addition to the above-mentioned partnerships and focus areas, the 2d BCT’s 526th Brigade Support Battalion (BSB) developed a partnership with its 6th IAD logistics brethren to meet the 6th IAD’s critical logistics shortcomings. A logistics training and advisory team (LTAT) was formed in November 2007. This effort and the efforts of other BSBs in Iraq led to the creation of an XVIII Airborne Corps standard for follow-on BSBs to use in their efforts to assist ISF commanders in developing a responsive and credible logistics system.

Over a 13-month period, the 526th BSB LTAT saw significant growth in its partnered Iraqi Army brigades. Brigade and battalion commanders in the 6th IAD began to adopt logistics policies to streamline and improve their unit-level systems. Their efforts, combined with the efforts of the 526th BSB LTAT, resulted in a dramatic improvement in maintenance and supply policies and, more importantly, a dramatic rise in the operational readiness rate of their M1114 up-armored high-mobility multipurpose wheeled vehicle fleets.

Establishing an LTAT

It is important to describe the ISF landscape that existed in western Baghdad when the 2d BCT arrived in the area of operations. Two Iraqi Army brigades, the 54/6 and 22/6, operated primarily in western Baghdad, along with other Iraqi Army and National Police units. The 6th IAD headquarters and its related units operated in the Karkh, Kadamiya, and Mansour districts, backed by an almost nonexistent ISF logistics system. The operational readiness float rate hovered around 25 percent for critical systems such as the M1114. Troop and cargo-moving trucks, which were Polish- and Russian-built, were at a staggering 90 percent not-mission-capable rate.

Engine repair parts were not available at the unit level and were mired in bureaucracy at the Taji national-level repair shop. Authorized stockage lists and prescribed load list repair parts were foreign concepts for the division. Units did not have supply personnel, such as company-level supply sergeants, because few of the supply slots on the modification table of organization and equipment were filled. Unit-level supply procedures were nonexistent. The ISF used a manual supply system that further complicated the logistics common

A Military Transition and Training Team member trains an Iraqi soldier with the 6th Iraqi Division to change out headlight assemblies on a high-mobility multipurpose wheeled vehicle. (Photo by Petty Officer 2nd Class Robert J. Whelan, U.S. Navy)

operational picture. The cultural factors of patronage, sectarianism, and old-fashioned graft produced an ISF logistics system mired in bureaucracy and inefficiency.

The planning factors used by the 526th BSB planners proved successful and can be used in both Iraq and Afghanistan by follow-on BSBs to establish LTATs. First, BSB planners must develop a desired end-state for their efforts. Second, a dedicated team must be built to partner with the host nation's military logisticians at every level. Third, LTAT members must learn the host nation's military logistics infrastructure and policies. Fourth, links between the BSB LTAT and the coalition force division ISF cell and G-4 office are critical and must be established before the partnership activities commence.

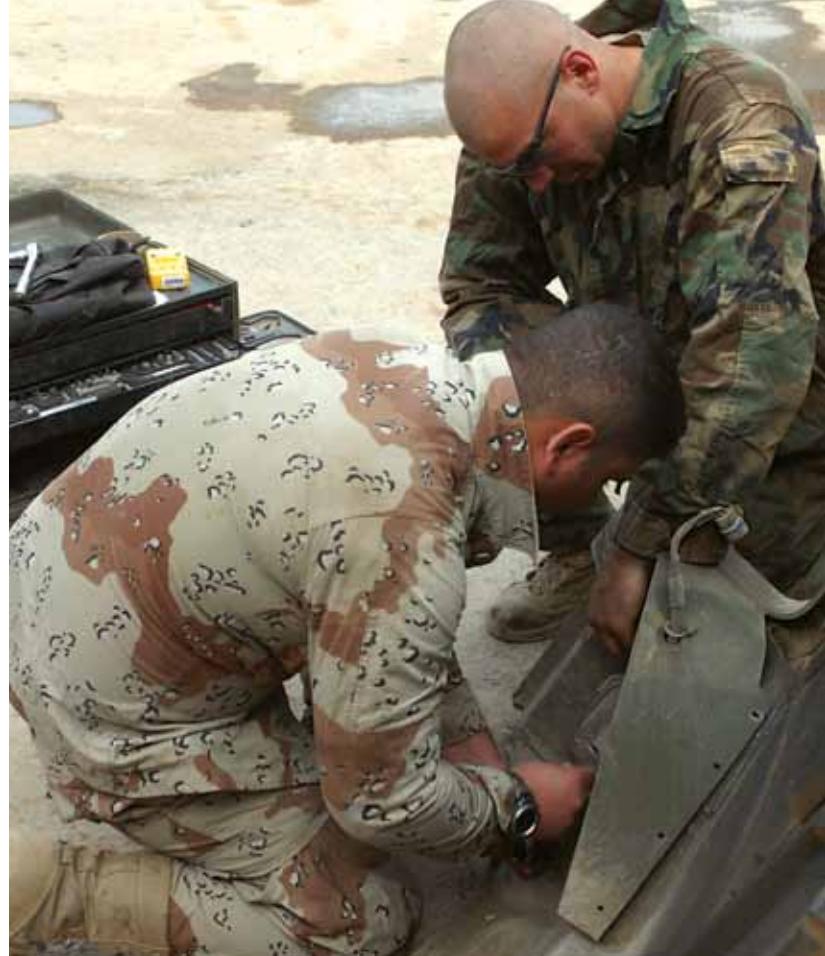
Even with the serious logistics problems in emerging armies in nations like Iraq and Afghanistan, a successful logistics partnership can be established. Utilizing the four principles mentioned above, BSBs and other support units can establish a viable LTAT. Logistics partnerships are a critical part of the MiTT advisory concept and will enhance the overall growth and development of host nation security forces.

Developing a Desired End-State

The first planning factor is to decide what you want to accomplish—develop a desired end-state. Before executing any logistics partnerships with host-nation security forces, the partnered units must conduct a careful assessment. The 526th BSB planners conducted several assessment visits with the 54/6 and 22/6 brigades down to the battalion levels. The BSB planners consulted MiTT chiefs and logistics officers for assistance in developing an accurate common operational picture of the Iraqi Army brigades and battalions. Iraqi brigade and battalion S-4s were also interviewed and made an integral part of the assessment process.

Iraqi Army unit-level logisticians were made a part of the solution process for their unit-level logistics issues. When the initial assessment visits were completed, BSB planners developed a comprehensive partnership plan and a way ahead.

Sustainable security for Iraq was the overarching goal and could not be reached without sustainable logistics. BSB planners determined that the Iraqi logistics social and tribal networks are the current driving forces behind a stagnant logistics system in the 6th IAD. To reach sustainable security in western Baghdad, the 6th IAD needed significantly improved operational readiness rates, trained Iraqi Army mechanics and sup-



ply personnel, trained MiTT logistics officers with the ability to guide their counter-parts, and most importantly, a results-oriented logistics system.

To overcome these significant logistics issues, BSB planners determined that standardized training packages should be used to train Iraqi Army logisticians. These standardized training packages needed to be able to provide critical feedback to MiTT chiefs and their counterpart Iraqi commanders. Training had to be relevant and flexible enough to react to unit-level changes. MiTT logistics officers had to be familiar with the characteristics and policies of the ISF logistics system. Logistics relationships between the unit-level logisticians and the strategic-level logisticians at the Taji National Depot needed to be strengthened with a working information flow system to provide visibility for MiTT chiefs and their counterparts.

An LTAT concept of operations must be broad in nature and have the ability to react to unit-level changes. As in the case of the ISF logistics system, the driving force behind change is at the national and strategic levels. An LTAT at the unit level will succeed when the concept of operations can adapt based on changes at higher levels of host-nation command.

Building a Dedicated Team

In addressing the second planning factor—build a dedicated team to partner with the host nation's military logisticians at every level—BSB planners

must take into consideration their current mission set and requirements when developing their LTAT. Mission support to the BCT is the primary mission. BSBs deploying to Iraq will deploy to a very mature theater, and the traditional BSB mission sets used during forced-entry operations are no longer required. Therefore, nonstandard mission requirements like the LTAT concept are workable.

The 526th BSB's personnel represent more than 60 military occupational specialties and can provide a host-nation military unit with valuable training and experience. The 526th BSB LTAT task organization was developed to meet the 6th IAD's logistics needs. To facilitate the coordination requirements with the coalition force brigade and division ISF cells, the LTAT officer in charge (OIC) must be a field-grade officer.

Other critical members of the team included the Muthana logistics cell and the Taji logistics cell. The Muthana logistics cell's mission was to partner with the 6th IAD G-4 and work division-level logistics issues. The Taji logistics cell's mission was to partner with ISF logisticians at the strategic level at the Taji National Depot. In addition, this team partnered with the 6th Motorized Transportation Regiment headquartered in Taji, whose doctrinal mission was to provide transportation support to the 6th IAD. The maintenance, supply, and medical training teams acted as the BSB's bedrock training teams and were supplemented by specialty training teams.

The BSB materiel management cell assisted MiTT chiefs and the LTAT OIC with critical logistics information. The officer and senior noncommissioned officer managing this section needed the ability to process large volumes of logistics data and assist the LTAT OIC in developing new courses of action to alleviate issues that arose from changes in the ISF's growing logistics system.

Performance indicators, such as overall operational readiness rates, critical-systems operational readiness rates, Taji Wheel Shop production rates, and Iraqi Army requisition approval rates, were tracked on a daily and weekly basis. This information assisted BSB planners and MiTT chiefs in their partnership efforts. Such information allowed for targeted partnership topics with the 6th IAD's counterparts. More importantly, this information provided the brigade commander with the ability to present a current logistics common operational picture to the 6th IAD commander.

*A Logistics Training and Advisory Team officer instructs Iraqi Army soldiers on vehicle maintenance.
(Photo by SPC Lisa A. Cope)*

Military Logistics Infrastructure and Policies

The third planning factor is for LTAT members to learn the host nation's military logistics infrastructure and policies. After assuming the LTAT partnership, it was clear that MiTT logistics officers and their ISF counterparts did not understand the host nation's logistics system. BSB planners overcame this issue by developing a MiTT logistics officer training manual. This manual provided a reference document for MiTT logistics officers to use in researching the Iraqi Army logistics system while diagnosing and fixing issues at the unit level. The manual also allowed MiTT logistics officers to provide daily training and mentoring for their Iraqi Army counterparts when needed. But most importantly, the manual acted as a tool for developing Iraqi solutions to logistics problems. Buy-in was created by ISF solutions, and belief in the logistics system began to grow at the unit level.

Establishing LTAT and ISF G-4 Links

Links among the BSB LTAT and the coalition force division ISF cell and G-4 shop are critical and must be established before partnership activities begin.

Early in the 526th BSB's assessment phase of its LTAT operation, the LTAT detected a lack of coordination among the various levels of the ISF logistics system. Likewise, links within coalition force staffs are essential to the success of any LTAT program. A program cannot succeed without being linked to the brigade ISF cell, various other staff agencies at the BCT level, the division ISF cell, G-4, and the corps C-4 ISF cell.

A BSB LTAT program must be able to see the strategic level when planning partnership activities. This is critical because of the LTAT's direct connection to Iraqi Army logistics decisionmaking processes at the strategic level. Without the linkage to the strategic level of MiTT partnerships, the division ISF cell, and G-4 ISF logistics planning, visibility of ISF logistics activities is nearly impossible and the BSB LTAT's impact on partnered





While setting up a supply system for the 6th Iraqi Army Field Engineer Regiment, an Iraqi lieutenant learns how the U.S. military uses the parts manual to order parts. (Photo by SSG April Mota, 16th Engineer Brigade Public Affairs)

units becomes negligible. More importantly, visibility of strategic-level plans and decision-making, both on the ISF and coalition sides, increases the probability that actions taken at the LTAT level will support this higher-level planning.

Reinforcing the ISF logistics system is critical to the long-term growth of the Iraqi Army. Visibility from the unit to the strategic level is a strong connection and links the BCT level to actions taken by higher-level staffs. Not only must links to embedded provincial reconstruction teams (ePRTs), BCT ISF cells, S-9 staffs, and joint program management office activities provide expert advice; staff and resident experts must be made available to the BSB LTAT to sustain the partnered units' growth and conduct joint partnership activities.

In a governmental system with departments, or ministries in the case of the Government of Iraq, that seem to operate independently, linking to the ePRT governance section at the BCT level is important to addressing issues such as host-nation army division fuel and oil distribution. Likewise, class VIII (medical materiel) distribution and request issues can be linked to the Ministry of Health.

When it is critical to engage local businesses to develop and strengthen an existing military logistics system, the BCT S-9 and human terrain team can be of invaluable assistance. [A human terrain team consists of Army and civilian experts who can try to close the cultural gaps between U.S. forces and Iraqi soldiers and politicians.] The BCT joint program management office cell can also provide LTATs with guidance on developing packages to improve infrastructure on host-nation army bases.

Military planners must remember that logistics partnerships are just as important as the traditional MiTTs that partner with a host-nation unit and teach its leaders how to conduct proper military planning and bring the fight to the enemy. Sustainable security cannot be attained without a strong sustainable logistics structure in place for the host-nation military unit. Maneuver commanders must understand that resourcing an LTAT

program is critical to the success of its partnered units. Host-nation leaders in both Iraq and Afghanistan must understand that operational planning teams must include a resident staff logistician.

Through coaching, teaching, and mentoring, we must encourage our host-nation military commanders not to consider operational planning complete without first completing a strong logistics assessment. We, as partners, must encourage the development of a culture that encourages the growth of logistics experts within their ranks. Establishing an LTAT program will allow host-nation military units to develop a path to success and good stewardship of their internal assets.

A dedicated LTAT team in a BSB or other coalition force units, combined with a working knowledge of the host-nation logistics infrastructure and policies, will create buy-in by partnered units. BSB planners and logisticians must not put a coalition face on host-nation problem solving, but they must set out to coach our brethren to find their own solutions. Support from the BCT staff is critical to the long-term effectiveness of the LTAT program within the BCT.

During its OIF 07–09 deployment, the 526th BSB LTAT saw huge successes from its efforts. Operational readiness rates improved to a steady 85 percent for M1114s. Division-level policies for submitting and processing of the Iraqi Army Form 101 (the basic Iraqi Army supply and logistics support request form) were implemented—the first of their kind. The 6th IAD implemented class IX (repair parts) prescribed load lists and authorized stockage lists. The flow of class IX from the strategic to the unit levels improved drastically when compared to late 2007.

Iraqi Army brigade and battalion commanders began to insist on staff-level logistics meetings, and Iraqi Army officers and noncommissioned officers began to discuss logistics issues and implement their own solutions within their units. MiTT chiefs and maneuver commanders encouraged the implementation of logistics training within their counterpart units. These efforts were successful, and the logistics indicators within the 6th IAD improved dramatically. Sustainable security in western Baghdad was achievable when backed by an improving sustainable logistics system within the 6th IAD.

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Logistics Partnering Lessons

BY CHIEF WARRANT OFFICER (W-2) JULIAN PRICE

While deployed to Operation Iraqi Freedom (OIF) 07–09, the logistics training and advisory team (LTAT) of the 47th Forward Support Battalion (FSB) “Modern Pioneers,” 2d Brigade Combat Team, 1st Armored Division, executed numerous partnership events. The 47th FSB (now the 47th Brigade Support Battalion) was tasked with the mission of training and mentoring the 9th and 17th Iraqi Army (IA) Divisions on logistics. The objective was to teach a method of self-reliance that would enable the Iraqi logisticians to sustain and equip their army.

Over the course of the deployment, the Pioneers conducted more than 55 classes and trained more than 300 IA soldiers from the two divisions. The LTAT provided weekly training to the divisions based on the logistics priorities of their G-4s and motorized transportation regiment (MTR) commanders. Training

A mechanic from the 47th Forward Support Battalion shows the components of an International Harvester 5-ton vehicle to mechanics from the 17th Iraqi Army Division Motorized Transportation Regiment.



topics included maintenance operations, supply management, driving, convoy security, staff development, and medical support.

Introduction to the Command Team

Before initiating each partnership, the Pioneers participated in a key leader engagement—one of the most critical initial steps in any partnership. Through these engagements, the command team built a bond and a sense of mutual respect with the IA command team. Establishing a relationship with the leaders ensured that the IA trusted the Pioneers and felt comfortable working with them to determine how best to use the LTAT personnel to train, give advice, and make recommendations to the IA command, staff, and soldiers.

Getting Started

The first step was to create the LTAT, which comprised subject-matter experts from all fields of logistics. The LTAT members were required to attend a 5-day course at the Phoenix Academy in Camp Taji, Iraq. There they learned how to provide relevant and viable sustainment training packages for maintenance, supply, medical, and other readiness support in order to achieve IA self-reliance. The attendees also learned the logistics policies and procedures of the Iraqi Ministry of Interior and Ministry of Defense.

Next, the Pioneers provided the 9th and 17th IA Division G-4s and the 17th IA Division MTR each with an embedded liaison officer (LNO). The LNOs served as liaisons among the command teams. They were beneficial for situational awareness, planning, and tracking procedures. The LNOs provided a constant presence for mentoring and training the division G-4 and his staff on a daily basis. It was vital for the LNO to support and show faith in the Ministry of Interior and Ministry of Defense procedures throughout all training and assistance.

The embedded LNOs took the lead in finding the IA’s daily logis-



The 47th Forward Support Battalion commander and the 17th Iraqi Army Division Motorized Transportation Regiment commander brief their staffs on the intended outcome of an Iraqi Army division staff visit to Camp Striker.

tics problems and then provided the IA with recommended solutions to their problems. The LNOs advised IA personnel on how the IA system should work and helped them build the confidence needed to address their problems through the IA system, using the coalition force only for reporting and follow-up procedures.

Best Practices

The LTAT initially trained each IA soldier separately from the officers and senior noncommissioned officers (NCOs). But the LTAT personnel soon discovered that the more they interacted with the IA soldiers, the more the lower enlisted soldiers came to the LTAT instead of their own leaders for guidance.

The LTAT eventually focused on developing strong, confident leaders. One method used was to train the leaders for a day or two and then have the leaders present the class they had just attended to their soldiers. This worked very well with the developmental staff courses and the supply classes, but it did not work as well with other classes that had more technical information. For example, the senior leaders were unable to teach the maintenance course with confidence, so the LTAT had the senior leader assist the LTAT trainer in presenting the information. Although it was not IA led, this kept the IA leader in the front of the class, which built the confidence of the IA soldiers in their leaders.

The LTAT often used a “crawl, walk, and run” method of training for the IA soldiers. Since all of the personnel had a different level of knowledge in different areas, it was easier to start with the basics to ensure that all personnel learned the necessary tasks.

One procedure the LTAT found to be useful was to use a sign-in roster. The IA platoon leaders and junior staff officers had a hard time planning and managing personnel for future training and missions. On many occasions, the LTAT would start a training series with one group of personnel and end it with an entirely different group. The implementation of sign-in rosters helped the trainers assist the staff officers and platoon leaders to more accurately manage their personnel training. This also kept the LTAT from training the same person twice and allowed the students to move on to training that was more technical.

Because the sign-in rosters could be used to verify course completion, the LTAT was able to present the IA personnel with certificates during an awards ceremony. The certificates, which were signed by the 47th FSB commander and command sergeant major, certified the recipients to train their soldiers in a formal training environment. The award ceremony gave the IA soldiers a great sense of pride and accomplishment, which made them eager to continue training at the next level. The IA leaders and soldiers wanted the coalition forces to know they were capable of performing their missions, and for some, this was the first certificate of schooling that they ever received. The IA was proud of the things that they learned and would constantly request feedback from coalition forces. It is important to always let the IA know how well both the leaders and soldiers are doing and how much their efforts are appreciated.

The LTAT often used practical and written examinations during training. The IA students were required to pass the practical exams to advance to the next



A medic from the 47th Forward Support Battalion uses an artificial human arm to show two 9th Iraqi Army Division personnel the correct procedures for putting an intravenous needle into a patient's vein.

of instruction to their staff officers and NCOs.

Each MiTT facilitator structured the class presentation to meet the content of the course. For example, during the staff estimates class, each student was required to develop an estimate for a mission and apply the concepts learned to a hands-on application. The most difficult constraint was keeping the students enrolled in the class. However, after adjusting the program of instruction to allow leave opportunities within the 17th MTR, the program flow was much smoother.

During the Pioneers' partnership with the 17th IA Division MTR, one of the most beneficial events was the staff visit to Camp Striker, where the Pioneers hosted selected MTR command and staff members

at a site visit of their shops and commodity areas. Each visitor was matched with his coalition force counterpart. The visit gave the MTR staff a firsthand view of the situations that a coalition force logistics battalion faces while providing support to its BCT and the courses of action that have been either effective or ineffective. The Pioneers also wanted to illustrate to the 17th MTR how they conducted sustainment operations for the 2d BCT, coalition, and Iraqi Security Forces during OIF 07–09. The visit gave the MTR a firsthand explanation of why and how the Pioneers train and advise the MTR.

The train-the-trainer concept was very beneficial because it removed the language barrier from IA soldiers' primary instruction. The ease and accessibility of the class placed the LTAT and MiTT one step closer to transitioning ownership of the training to the IA leadership, which is one step closer to the IA's self-reliance.

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training event. This allowed the LTAT to monitor their progress and ensure that they were retaining the material being covered. After implementing this step, it became evident that the IA personnel were following English instructions and understanding coalition force equipment better than the trainers thought. During after-action reviews, the IA soldiers expressed how intimidating the English instructions had initially been to them because most of them did not speak or read English. (Many did not even read Arabic.) Yet with the training they received, they were able to understand the instructions clearly. This was vital because most technical manuals for their equipment have not yet been translated into Arabic.

Staff Development Course

Another beneficial event was the Staff Development Course, which was a 2-day block of staff-related training for 17th MTR instructors (usually two or three officers or NCOs). The course was led by the 17th MTR military transition team (MiTT), which was partnered with the MTR in January 2009 to mentor and train them alongside the Pioneers. After attending the course, the IA instructors presented a 3-day block

Starting a Partnership Through Logistics Key Leader Engagement

BY LIEUTENANT COLONEL CHRISTOPHER J. WHITTAKER

Kirkuk, Iraq, is a quiet place. It does not garner the headlines that Baghdad does, but it represents the ethnic fault lines that may determine Iraq's future. At and around Kirkuk, Kurds, Arabs (both Shia and Sunni), and Turkmen have fought over land for generations. This makes the military situation very interesting. Iraqi Army divisions with Arab and Kurdish commanders are based next to Kurdistan Republic Government brigades. Each is interested in what the others are doing or what it suspects they are doing. Each unit is flavored by the ethnic makeup of the commander and the soldiers. At the senior level, an invitation or declination of an invitation can be seen as favoritism or a snub between ethnic groups.

Friendship Before Business

I have not had many key-leader assignments in my career, so the Key Leader Engagements Course at the Joint Readiness Training Center (JRTC) at Fort Polk, Louisiana, was an invaluable crash course on Arab life, culture, and politics. The scenarios presented at JRTC helped identify key engagement strategies that were useful during the initial key-leader engagements I had with my Iraqi partners. JRTC provided various strategies (such as the art of saying yes without committing) that demonstrated the complex environment faced when dealing with Iraqi partners. The enduring strategy that I used for all engagements was "friendship before business." This tactic was invaluable during my initial engagements because I had no target folders to provide valuable background information before entering the engagements.

12th Motorized Transportation Regiment

The 2d Brigade Combat Team (BCT), 1st Cavalry Division, arrived in Kirkuk in January 2008. The BCT filled the gap created when a brigade from the 10th Mountain Division had left 6 months earlier. This meant that many of the 2d BCT units, including those of us in the brigade support battalion (BSB), had to start partnerships with Iraqi units from scratch or renew neglected partnerships. In theory, we should have replaced the 10th BSB as they were redeploying. I was officially tasked to partner with the Iraqi Army (IA) 12th Motorized Transportation Regiment (MTR), but I was unofficially partnered with the 12th IA Divi-

sion G-4 and the Locations Command. Fortunately, all of my partners were located on the same Iraqi base.

My first opportunity to meet all of my partners occurred at the Locations Command's monthly meeting at K1 (the Iraqi Army base at Kirkuk that was home to the 12th IA Division Headquarters, the Locations Command, and some other divisional units). My designated partner, the 12th MTR, was the main logistics force for the 12th IA Division. The 12th Division itself was new. Formerly a static pipeline guard force, the division was standing up with new leaders, new equipment, new units, and new locations. Also a brand new organization, the 12th MTR was at 50-percent strength, had 25 International 5-ton trucks, and had a captain (instead of a colonel) as its battalion commander.

I met this captain with the military transition team (MiTT) chief, my S-2, and my interpreter in the battalion commander's office—a room in the battalion headquarters that was empty except for two desks, seven chairs, and one coffee table. After entering the smoke-filled room, we were seated in the chairs in front of the commander's desk. Having just been briefed by the MiTT chief, I was aware that this was not going to be easy. We talked with the captain and tried to glean ways to partner and build his capabilities. As we talked with the commander, he repeatedly offered us cigarettes and chai (tea) but refused our attempts to help prepare his unit for the unit set fielding that it was to conduct at Besamia training area.

Because his unit was still forming, he had no functional staff or company organizations, although his modification table of organization and equipment authorized him seven companies. The MiTT chief and I tried every means to convince him to do some logistics training (capacity building) so that his unit would be ready to drive its new vehicles and shoot its weapons. We tried all the rapport-building steps taught at JRTC, but they were not breaking the ice. The commander was very cold and unreceptive to our requests. During the conversation, he said that he had a pain in his arm, so I took note and brought my doctor from my medical company on the next visit.

The doctor diagnosed the commander's injury as nerve damage and gave him some aspirin. But the effect of our caring about his health was powerful; I had shown him that friendship was more important than business. I had learned this technique at JRTC

and realized what a variety of services I was lucky to have available for partnering. The commander then insisted I smoke one of his cigarettes and that I bring my interpreter when I returned. These three things were the icebreaker after a rather frosty beginning.

The interpreter became my main interpreter because she broke the ice with the captain. This cleared the way for some rather tough negotiations for drivers' training classes, weapons maintenance, and medical training that went above and beyond the training on drill and ceremony that they had been conducting. Every time I returned, I took a Soldier with another specialty from my battalion, smoked a cigarette, drank some chai, and worked on convincing my partner to agree on some partnership training. This became the basis for our working relationship.

Locations Command

My second and easiest partner was the Locations Command commander. A Kurd from Irbil, he was easy to partner with because he had enjoyed the relationship he had with the 10th BSB and often stated how he had missed that partnership during the 6-month gap between U.S. units. He was very open and generous in his spacious office and offered us water, soda, candy, and baklava during every visit. His office was like a train station. Besides the 15 people it could seat on the couches, 5 to 10 Iraqi officers and soldiers were always entering with a foot stomp and salute and exiting with the obligatory signature and seal from the general. Asked when I was going to visit, I told him that, based on my schedule, I could visit on Sundays, Tuesdays, or Thursdays. He immediately insisted that I visit him every Tuesday at 1000 (the day and time that the 10th BSB commander had visited) for an office call and that I eat lunch at his table in the Locations Command dining facility.

Unlike the 12th MTR, the Locations Command has excellent facilities, trained personnel, and an experienced leader. The Locations Command had office buildings, barracks, and a clinic that were about 3 years old and fully furnished and equipped. The leaders at all levels of the Locations Command were eager to train and build their capacity. We just had to make sure that we were building their capabilities, not doing the work for them.

The most significant partnerships for us were with the maintenance facility and the clinic. The level III maintenance facility (levels I and II occur at the brigade and MTR, respectively) was run by an IA colonel whose sole concern was repair parts. He had very good mechanics but limited tools and repair parts to repair the vehicles that were provided by six different nations. During my first encounter with him, he was to the point, saying "I don't need any help if you can't get me parts."

The commander of the Locations Command had other ideas; he asked us to evaluate his maintenance system and look at the organization. As a result, and in coordination with the logistics training and advisory team, we provided some organizational help, which included identifying repair parts, organizing locations, validating repair parts on order in the Iraqi Army Maintenance Program, and assisting with acquiring tools from the Taji Supply Depot.

The Locations Command clinic provided a robust partnership opportunity. The clinic's commander was excited about continuing the partnership after experiencing the void left by the departure of the 10th BSB. Our first event was an invitation to provide oversight and mentorship during combat lifesaver training and a mass casualty exercise. This was followed by visits from our physician's assistants,

The commander of the Iraqi Army Locations Command meets with his U.S. partners in his office.



dentist, x-ray technician, preventive medicine personnel, lab technicians, and the other specialists in my medical company. The challenge was to teach them or enable them without giving them supplies or doing the work for them. For example, we sent our dentist to teach their dental technician how to do basic procedures, such as exams and cleaning, since they had no dentist. Although they wanted us to do dental exams, we turned it into a training session. We were also asked for medicines, but instead, we pointed them in the direction of their own supply system to order the right items.

One challenge was to get the Locations Command sections to work together. The clinic commander asked us one day for some rash cream that he did not have. After further investigation, we discovered that the cream was in one of six trucks of medical supplies that were at Taji awaiting delivery. The clinic commander had no idea how to get the supplies back to K1, so I convinced him to go to the commander of the Locations Command and request truck support to get the supplies.

12th IA Division G-4

I first met the 12th IA Division G-4 at the K1 maintenance meeting. A former two-star general under the old Iraqi Army, he had his hands full with a new undermanned and underequipped division. His biggest challenge was equipping the division using the current process of submitting the IA Form 101 (the basic IA supply and logistics support request form) through four levels of bureaucracy to obtain the proper stamps. Some of the requisitions I saw were the size of novels because of the number of stamped pages that went along with the request.

The K1 monthly maintenance meeting had disintegrated from a robust meeting that included the brigade commanders of the 12th and 4th Divisions to a poorly attended maintenance meeting of the brigade executive officers and maintenance technicians. The G-4 was not happy about the poor attendance, so the MiTT chief and I suggested that they—

- Use the division commanders to force attendance.
- Provide information on what the division was doing to obtain repair parts.
- Provide attendees with a current picture of open and working maintenance jobs at the Locations Command.
- Make the meeting a platform to voice unit issues and to provide the Iraqi Ground Forces Command (higher headquarters) with solutions.

Improving Communication

The leadership challenge during the deployment was getting the logistics organizations to talk and work together so that they could be mutually supporting. Once the MTR was capable of doing missions, a logistics synchronization meeting was held between the

12th Division G-4, the MTR, and the Locations Command. This meeting was beneficial to coordinating the movement of supplies and logistics within the area.

A case in point was the challenge of obtaining 44 pallets of tools that the Locations Command needed to have moved from Taji to K1. The Locations Command had signed for the parts and put them in a warehouse, but it had no way of getting them since the 12th MTR did not have vehicles or qualified drivers and the Locations Command had no transportation assets. The 12th Division had transportation assets, but no one asked them for help. When the commander of the Locations Command finally asked them for help, the 12th Division G-4 sent 15 trucks to pick up the pallets. Success! The pallets were at Taji, released and ready for movement, from January to mid-March.

The problem was solved internally by getting the two main players to talk. This struggle continued throughout our deployment as we continued to coach, prod, and mentor the IA logistics staffs to routinely talk and coordinate with each other. Toward the end of our deployment, we saw senior staff members from the 12th Division execute the evacuation of mission-critical vehicles to Taji for repair and return in 2 months—all because of cross-coordination among the various logistics elements. Building and sustaining trust was a constant effort that we worked on through key leader engagements.

The challenge in key leader engagements is to build trust first, then consensus—as the Iraqis say, “friendship before business.” I used a variety of techniques to gain that trust and friendship, and they had varying results and levels of success. Each key leader had a different leadership style that affected how he conducted business. The true art was to switch styles multiple times during a visit in order to interact and aggressively partner while not simply giving the Iraqis supplies. Over the past few years, Army units have simply given Iraqis stuff, and they have conditioned the Iraqis to ask and then try to shame us for not supporting them. This easier path was not helpful in assisting the IA units to become independent.

Having a partnership that helps the Iraqis solve their own problems is more beneficial to them because it allows them to learn to operate efficiently on their own. This was our goal as we partnered with the Iraqi units.

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Improving Access to HAZMAT Transportation Information

BY DR. UPTON R. SHIMP AND CHRISTINE L. HOLIDAY

Transporting hazardous materials (HAZMAT), especially ammunition and explosives, carries inherent risks and must be executed with the utmost attention and care. A mistake, such as mislabeling or incorrectly packaging HAZMAT, could be catastrophic. The Department of Defense (DOD) has an excellent record of safely distributing ammunition and other HAZMAT to the warfighter, but until recently a common source for obtaining and sharing critical HAZMAT knowledge did not exist.

In January 2009, the Army Defense Ammunition Center launched the HAZMAT Transportation Community of Practice (CoP) portal, which can be accessed through both the Army Knowledge Online (AKO) website and the Battle Command Knowledge System (BCKS). A CoP is a collection of people who have a common interest in a particular subject and who interact regularly to broaden their knowledge on that subject. The CoP portal connects the HAZMAT transportation community and provides a forum for sharing expert knowledge, lessons learned, and best practices.

Knowledge Management via the Internet

Our warfighters need access to critical information so they can act quickly and decisively. Recognizing this, DOD launched a major initiative to embrace knowledge management by leveraging the power of the Internet and the latest information technology. Knowledge management disciplines allow the warfighter to obtain critical and relevant context-rich information, connect and collaborate with experts and colleagues, and accelerate and enhance situational performance and decisionmaking to achieve mission objectives in real time.

Accurate and timely information has become more important than ever before as U.S. military forces are stretched across the globe conducting numerous and varied operations. To make operations as efficient and safe as possible, those with information must share what they know. Unfortunately, an extraordinary number of seasoned DOD employees will soon reach retirement age, and DOD will lose decades of

experience and knowledge with the oncoming wave of retirements. CoP web portals, like the HAZMAT Transportation CoP portal, are among the tools DOD can use to capture that knowledge before it is lost.

Another CoP portal is the Ammunition CoP, which was launched by the Army Defense Ammunition Center in 2008 and resides on the Defense Acquisition University's Acquisition Community Connection website (<https://acc.dau.mil/ammo>). This CoP brings the ammunition community together to discuss various ammunition-related issues, such as information systems, operations, training, and logistics.

HAZMAT Transportation CoP

The Army Defense Ammunition Center is DOD's focal point for ammunition knowledge and logistics support. Its Training Directorate is responsible for training professionals in explosives safety, logistics operations, transportability, and the demilitarization and disposal of explosives and other HAZMAT. Over the years, the number of students requiring training in these areas has increased significantly, and as a result, the demand for post-training resources has also increased. The HAZMAT Transportation CoP helps meet this demand.

The HAZMAT Transportation CoP is an interactive knowledge base that enables transportation professionals to communicate and share their experiences distributing ammunition and other HAZMAT around the world. The CoP is an excellent resource for lessons learned, best practices, and links to HAZMAT regulations, policies, and other relevant topics of interest. One of this CoP's key features is the online discussion forum in which members can ask the community-at-large questions. Topics run the gamut of HAZMAT transportation—from shipping papers, marking, labeling, placarding, and packaging to compatibility of materials shipped together and emergency response information. The Army Defense Ammunition Center's HAZMAT instructors, who have many years of experience shipping HAZMAT throughout the world, regularly monitor the forums and answer any questions left unaddressed.

THE HAZMAT TRANSPORTATION COP IS AN INTERACTIVE
KNOWLEDGE BASE THAT ENABLES TRANSPORTATION PROFESSIONALS
TO COMMUNICATE AND SHARE THEIR EXPERIENCES DISTRIBUTING
AMMUNITION AND OTHER HAZMAT AROUND THE WORLD.

MANY COUNTRIES HAVE AGREED TO HAZMAT-RELATED SAFETY STANDARDS, BUT SOME COUNTRIES HAVE UNIQUE HAZMAT REQUIREMENTS, ESPECIALLY REGARDING ITS TRANSPORTATION.

The Army Defense Ammunition Center will also use the portal to push timely and relevant HAZMAT transportation information to the CoP members. For example, members can visit the portal to find information and schedules for any of the center's upcoming HAZMAT courses and training sessions.

The CoP is especially helpful for Soldiers and transportation personnel deployed to Iraq and Afghanistan, where access to HAZMAT experts and resources is limited. They can now learn within hours, rather than months or years, correct HAZMAT handling practices and apply that knowledge immediately and safely.

Because of the hazards associated with shipping HAZMAT and ammunition, numerous domestic and international regulations must be followed. Many countries have agreed to HAZMAT-related safety standards, but some countries have unique HAZMAT requirements, especially regarding its transportation. Even the most seasoned and experienced shippers may sometimes have difficulty interpreting and having full awareness of each country's various requirements. Because of this, the Army Defense Ammunition Center created the HAZMAT Transportation CoP to provide HAZMAT professionals ongoing training and assistance.

How the Portal Works

The CoP portal has four major sections specific to the modes of transportation: commercial air, military air, land, and sea. It also has a section for frequently asked questions and links to other relevant websites.

Under each transportation mode, information is categorized by topic. For example, under commercial air, information is categorized into commercial air marking checklist, segregation/compatibility, and shipping papers. CoP members can initiate or participate in forum discussions within any topic or explore past discussions to find the information they need. A "popular tags" capability allows members to see the most often read discussions and searches. Similar to the popular tags, members can have links to their own favorite resources. To further the learning experience, the portal also facilitates the sharing of videos and other media.

The portal establishes links to a network of HAZMAT professionals in the field. Because each

member must create a profile (with brief background information), it is easy to find members with specific expertise or interests. When a CoP member creates his user profile, he may include keywords that allow others to identify him easily. The CoP portal users can develop a list of contacts and ask others to join their network—a useful resource for entry-level Soldiers and civilians.

While seasoned professionals from the Army Defense Ammunition Center will be responsible for maintaining and adding the majority of the content to the portal, members can take ownership of the portal's development by suggesting ways to share knowledge, so the portal constantly adapts to meet the needs of its members.

How to Access the Portal

Those who have AKO accounts can access the portal through AKO or navigate directly through the BCKS professional forums at <https://forums.bcks.army.mil/>. If you are interested in becoming a community member and do not have an AKO account, you can register at <https://www.us.army.mil/suite/pages/reg/start.ext>. Contractors must have a military sponsor to obtain access to AKO and BCKS. Once you are logged-in on AKO or BCKS, do a keyword search for HAZMAT CoP wto access the portal.

THE ARMY DEFENSE AMMUNITION CENTER IS DOD'S FOCAL POINT FOR AMMUNITION KNOWLEDGE AND LOGISTICS SUPPORT.

For a workforce as widespread as the HAZMAT community, using the CoP portal improves transportation operations and enhances the Defense Ammunition Center's support for the 21st century warfighter. It also builds on the Army's efforts to transform itself into a net-centric, knowledge-based force. The Army Defense Ammunition Center knows ammunition, and the HAZMAT Transportation CoP portal provides a critical tool to help Soldiers do their ammunition mission safer, faster, and better.

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Improving Training for Recruiters

BY COLONEL JAMES H. COMISH AND DONALD D. COPLEY JR.

The Recruiting and Retention School (RRS) is responsible for preparing Soldiers to perform one of the Army's most important jobs: procuring the next generation of Soldiers and retaining those already in service. The school, part of the Army Soldier Support Institute at Fort Jackson, South Carolina, has developed the innovative and adaptive training programs needed to develop recruiters who are well prepared to present what the Army has to offer to the American public.

The training programs of RRS offer a combination of blended learning approaches, streamlined training development processes, online learning opportunities, and innovative training solutions that blur the lines between the institutional, organizational, and self-development training domains.

Blended Learning

Blended learning is a combination of two or more training methods. The goal is to deliver effective training while saving time and money. This approach combines a variety of techniques that range from traditional workshops and small-group instruction to the use of electronic text and other media such as CD-ROMs and DVDs.

Web-based training eliminates much of the cost of classroom instruction. Web-based approaches include virtual classrooms, self-paced distance learning, collaborative learning with or without an instructor, and streaming video, audio, and text.

At U.S. Army Recruiting Command (USAREC) headquarters and RRS, training developers and instructors have taken advantage of blended learning to create flexible learning environments. In pre-resident training, the student completes modules to gain basic knowledge; that basic knowledge builds the foundation for a higher level of learning during subsequent face-to-face instruction. This is the primary purpose of a blended learning curriculum in pre-resident training. Student feedback reinforces the importance of completing the training to prepare for active classroom participation and to obtain a firmer grasp of the instruction.

Six RRS pre-resident programs support blended learning: the Station Commander Course, Health Care Recruiter Course, Guidance Counselor Operations NCO [noncommissioned officer] Course, Recruiting Master Trainer Course, Recruiting Company Commander Course, and Pre-Command Course. These

courses use web-based technology for distributed learning by means of the Army Accessions Command Learning Management System (LMS) and the Virtual Classroom Server (VCS).

Both LMS and VCS have proven effective for unit training, new systems training, and Army Reserve recruiter training. USAREC master trainers use VCS for monthly and quarterly training sessions. VCS is effective in preparing students for classroom instruction, and it also allows RRS instructors to work with students before they report for the resident phase of courses.

Using LMS, VCS, and distributed learning with traditional classroom learning is the way of the future. The technology is here today. Web-based tools can facilitate communication, interaction, and collaborative learning in ways that were not available before. A blended learning model can improve learning retention by reinforcing concepts and providing hands-on practice through application sharing.

Streamlined Development Processes

The RRS Training Development (TD) Directorate, which is responsible for managing and maintaining training material for USAREC, has become one of the command's lead agents in change management. In USAREC, changes happen daily. Keeping pace with these changes requires TD to streamline its developmental processes. Streamlining a business process allows an organization to maintain its battle rhythms and provide ready and relevant training materials as changes occur.

Because of the unique nature of recruiting business practices, the traditional approach to training development that allowed a course manager the luxury of updating course material over several months is no longer acceptable. The rapid changes associated with USAREC require the expeditious development of training material in a matter of days, sometimes hours. As a leading change management agent, the RRS TD shop has pioneered new and innovative methods to ensure that training materials are ready, relevant, and available in a short amount of time.

The RRS TD is heavily engaged in streamlining the process of lesson development. Most TD shops across the Army have at least 21 to 30 personnel sharing a moderate workload. RRS customers demand updates at a rapid pace to meet their daily challenges, but the RRS TD has only 11 personnel. The solution was the

development of a streamlined process to accomplish all of the necessary work. What used to take a standard training developer 125 hours to accomplish now takes only 12 to 18 hours. These new processes have allowed training developers more time during a workweek to focus their energy on developing new capabilities and new training materials.

Each TD team member played an important role in deciding which parts of the processes were deleted or streamlined. Team members were assigned a particular step in the development and updating process and then were challenged to streamline it. Through several brainstorming sessions, the steps within the process were reduced and cumbersome work was eliminated. The elimination of steps within the process allowed TD to produce products at a much faster rate than other TD shops within the Army Training and Doctrine Command (TRADOC).

The use of the Army Systems Approach to Training (ASAT) database is the cornerstone for training development across the Army. It is sometimes referred to as an old, outdated, antiquated, and cumbersome system. However, the RRS TD developed innovative and more rapid approaches to lesson development procedures, expediting the cumbersome actions formally used in ASAT.

TRADOC is fielding a new training development system called Training Development Capability (TDC). It is in the implementation phase and will be reviewed for application to the Lean Six Sigma project once it is on line and ready for use. Meanwhile, the use of ASAT is still relevant because RRS must continue to produce Training Requirements Analysis System (TRAS) documents. TRAS documents consist of—

- ❑ Soldier training publications, which list critical tasks and performance steps for those critical tasks at every level.
- ❑ Officer-civilian foundation standards, which list individual critical tasks for officer and civilian staff members.
- ❑ Course administrative data, which contain all of the administrative information for each functional course taught at RRS.
- ❑ Programs of instruction, which provide instructions on how a particular course will be taught, including what methods will be used.
- ❑ Individual training plans, which provide information on how Soldiers in a military occupational specialty will be trained throughout their professional careers.

RRS has the ability to produce lesson plans in a format that adheres to all the regulatory guidance for lesson development mandated by TRADOC policies. Multiple benefits have resulted from this type of streamlined development. First and foremost, it allows RRS to maintain pace with the constant changes in

the field. Second, RRS can provide students with the most recent information for their use when they report to recruiting duty. Third, RRS can place all courseware material for all functional courses on its website and SharePoint (www.rrs.army.mil). Finally, RRS saved a tremendous amount of time and labor using a Lean Six Sigma approach to streamlining the development process. In short, the school's streamlined processes have allowed it to effect quick changes in lesson plan development and change management procedures.

As USAREC continues to change and leverage technology, the need to develop course materials in a timely manner remains a critical area of concern. The Lean Six Sigma project assisted the school in modifying the way it did business and ensured that it provides an up-to-date training support package for its customers across USAREC. As RRS continues to support the field force and its instructors, it will continue to pioneer changes in antiquated processes and procedures to produce ready and relevant training.

Virtual Training

In an effort to support Army leadership and counseling doctrine, RRS is offering voluntary VCS training sessions that provide opportunities for continued development. With the mandatory training on activating change being completed throughout the command, RRS allowed USAREC units to have additional prepackaged certified training, which provides them flexibility in planning and executing training requirements.

These voluntary sessions, facilitated by certified RRS trainers, can also be scheduled for company training requirements. Each of the eight interactive sessions are 90 minutes in length, designed to cover issues facing the field, and contain analytical and verbal practical exercises.

These virtual training sessions started on 31 July 2009. The field began to see these offerings promoted in the Recruiter Journal magazine, Recruiting ProNet (part of the Battle Command Knowledge System), and in the USAREC ProNet newsletter. These lessons are offered as a downloaded video from the RRS webpage (www.rrs.army.mil) under the "Live Training" link. They also have been integrated into the resident Station Commander Course, First Sergeant Course, and the newly developed Senior Master Trainer Course.

Filling the Training Gap for New Recruiters

RRS also has also embarked on a project for new recruiters. For many years, no sustainment training has existed for recruiters between the time they leave RRS and the time they initially report to their recruiting battalions. The average wait time for a Soldier reporting to their battalion is 2 months after they graduate from the basic Army Recruiter Course.

**RECRUITER TUTOR IS THE KEY
TO MAKING A MORE COMPELLING
CAREER PRESENTATION
TO POTENTIAL RECRUITS
AND PROVIDES ADDITIONAL
KEYS TO THE RECRUITER FOR
MISSION ATTAINMENT.**

In September 2009, RRS launched a pilot program designed to assist new recruiters in maintaining their counseling skills. The program runs on the Army Learning Management System, and all students enroll in the program's training modules before they depart from RRS. This pilot program is a joint effort among RRS, USAREC, and Lee Dubois Technologies. It has three distinct and innovative elements. The first and second elements are a resurrection of old and valuable tactics, techniques, and procedures (TTP). The final component is a training package from the Lee Dubois Technologies team.

The first element of this new training program—

- ❑ Introduces the field to the skills required to recruit successfully in a particular market and to move each recruiter from "self-centered concerns" or an "it's a numbers game" mindset to a focus on the applicant.
- ❑ Reveals significant market information that defines and targets the multiple markets in which the recruiter operates.
- ❑ Identifies bad habits that have hampered production and replaces them with new dynamic skill sets that take the recruiter to the next level.
- ❑ Initiates the move from "what we have" to "what we can do for you" in the Army Interview presentation.
- ❑ Provides the recruiter with early validation of his knowledge and understanding of the millennial generation.
- ❑ Excites the recruiter for the next element in the training package, the "Recruiter Tutor" module, which offers advanced counselor training as a dynamic, real-world solution for many of his problems.
- ❑ Ensures that Recruiter Tutor and future training modules sustain the recruiter.
- ❑ Prevents a drop-off in skills so recruiters in the field will be prepared to maximize the available tools.
- ❑ Helps the recruiter to understand and support the current advertising campaign, "*Army Strong*," so that he can build on it as a tool for generating leads.

The second element of this new training package is Recruiter Tutor, which was first introduced to USAREC in 2000. Recruiter Tutor is the key to making a more compelling career presentation to potential recruits and provides additional keys to the recruiter

for mission attainment. This element provides insight on how to—

- ❑ Establish instant rapport.
- ❑ Uncover hidden needs.
- ❑ Build stronger relationships.
- ❑ Arouse curiosity.
- ❑ Build a professional approach.
- ❑ Target Generation X and Y—the marketing match.
- ❑ Deliver a dynamic presentation.
- ❑ Convince the skeptical.
- ❑ Know when to close.
- ❑ Listen and observe body language.
- ❑ Elicit a commitment (closing)—ethically.
- ❑ Handle the competitive objection (obstacle).

The last component of the training program is a new training package from the Lee Dubois Technologies team, "Prospect for Success." This program is constructed in a modern virtual textbook interspersed with compelling videos. Recruiters get to see powerful prospecting techniques in full video, or they can actually write in live-fire exercises that will build their skills "on the fly."

The initial deployment of this training program is set for the next 4,000 Soldiers who graduate from the basic Army Recruiter Course. RRS will administer a survey following the graduation of the 4,000 Soldiers to ascertain the success of the investment in this new training program. This survey will use the same survey tool that RRS designed for previous graduates and has used as a benchmark to track the knowledge recruiters retain.

RRS designed this new training program to enhance a recruiter's ability to retain critical skills during the lag time between graduation and arrival at the recruiting battalion. During their entire time as recruiters, these 4,000 Soldiers will maintain their licenses for the training and will be able to continuously refer back to it for TTP.

RRS has been recognized by many external entities as a premier learning institution, employing blended learning techniques and leveraging state-of-the-art technologies. RRS is committed to providing quality instruction, effective sustainment training in field units, and comprehensive degree programs for self-development. As RRS is the first stop on an assignment to USAREC, the future is bright for Soldiers who choose to serve in this dynamic organization.

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Operation Kilowatt: The Generator Shop in a Modular Engineer Battalion

BY FIRST LIEUTENANT LESLIE McCANN

United States and coalition forces have become increasingly focused on self-sustaining operations. The drawdown of U.S. forces in Iraq requires the expansion of some sustainment capabilities, including power generation. Coalition forces at forward operating bases (FOBs) and joint security stations (JSSs) have a great need for more generator power. Many FOBs and JSSs have little or no capability to generate power to support daily living and day-to-day operations.

The Power Generation Problem

Recognizing the scarcity of power generation capability, the forward support company (FSC) assigned to the 5th Engineer Battalion developed Operation Kilowatt to build power generation capability within its area of operations.

The power generation capability gap in Iraq became evident in December 2008 after the 5th Engineer Battalion had been deployed for 8 months. With the support of the 25th Infantry Division, the battalion's FSC began repairing not mission capable (NMC) generators located at FOBs and JSSs. The FSC's task was to travel to FOBs and JSSs that were identified as having little to no generator power, make an initial assessment, and perform any necessary repairs.

The Defense Reutilization and Marketing Service (DRMS) became a major resource for the project. A total of 10 NMC generators were drawn from DRMS, and of those 10, 3 were refurbished into fully mission capable generators and redistributed to locations that needed them. The FSC created a service packet for the generators that included a maintenance and service checklist as well as elimination criteria. The common systemic problems found with DRMS generators and other generators throughout the process were faulty wiring, missing major components, and old age.

Mobile Generator Repair Station

Another key issue was determining the right equipment for repairing generators on site. The initial plan was to transform an RG-31 Mk3 mine-protected armored personnel carrier into a mobile generator repair station. Temporary shelves and compartments were fabricated and mounted inside the back of the truck, which allowed for additional storage of parts and tools. Bench stock and an authorized stockage list (ASL) were formed by determining the systemic problems and identifying the parts needed to address those problems, such as filters and electrical components.

An air compressor and pressure washer were also built into the truck. Pieces of equipment that are exposed to the desert elements are constantly caked in dust and sand, making it difficult to identify leaks or other faults. The air compressor and pressure washer increased productivity and decreased the time it took to diagnose NMC generators.

Because RG-31 Mk3 vehicles were eventually required to be turned in, a second mobile generator repair station prototype was developed in mid-April. After many days of brainstorming and searching the motor pool for a replacement, the FSC decided that a welding trailer could be converted into a mobile generator repair station.

The four compartments on the sides of the welding trailer already contain general toolkits and an air compressor. The inside is also large enough for a small generator and a 55-gallon water drum for the pressure washer. The trailer's advantages are its ability to be towed behind most vehicles, its tremendous storage capability, and its multifunctionality, which makes it easy to convert back to a dedicated welding trailer if necessary. However, a few disadvantages do exist: the bench stock and ASL on the trailer often need to be tailored to the type of generator that mechanics are currently working on, and depending on the type of generator, space may be limited for storing generator-specific parts.

The mobile generator repair station was successfully hauled behind a gun truck and driven to locations that needed power generators. In 4 months, the FSC repaired 20 generators. Of those, 16 had been deemed unfit for repair because of elimination criteria established in the service packet. The project matured leagues beyond what was expected.

Operation Kilowatt is an economic reconstruction program that can help both coalition forces and the Iraqi Army with generator repair. Operation Kilowatt could become an enabler for the Iraqi-Based Industrial Zone and local merchants. The project also has the potential to save a significant amount of money by refurbishing and repairing generators rather than purchasing new ones. The success of Operation Kilowatt is proof that a mobile generator repair trailer is efficient and produces positive results. The hard work put into the operation significantly enhanced the quality of life for units stationed at outlaying posts.

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Working Out at the JIIM: Embracing the Commercial Sector as First Among Equals

BY DR. CHRISTOPHER R. PAPARONE

Much of our communication about complex life experiences (including economics, wars, famine, and so on) is based on the use of metaphors. For example, military professionals tend to borrow meanings from other knowledge communities. (For a discussion on the prominence of metaphor in our day-to-day language, see my article, "Reflection on Metaphors We Are Led By," in the November–December 2008 issue of *Military Review*.)

We also tend to expand meanings for old terms and invent new words when faced with complex and novel situations. This tendency to create "neologisms" is especially common in the military profession. [A neologism is a new word that is in the process of being accepted into mainstream language or a new meaning for an old word.]

In a nutshell, I find that other communities borrow words from the military community (like "strategy," "logistics," and "tactics") while those of us in the military community borrow terms from others (such as "enterprise," "center of gravity," "operations," "systems," and so on). It is important that we remember that these words constitute analogous reasoning as we remain professionally aware of the inadequacy of complete meaning always present in them. Nevertheless, metaphors are necessary to enable otherwise disparate sectors to communicate meaning across the boundaries that separate them.

Keeping in mind the importance of metaphors in our professional discourse, my purpose for this short article is to focus on the military community's fondness for a particular neologism: "JIIM" (pronounced "gym"). Now part of our lingo, JIIM refers to the integration of joint, interagency, intergovernmental, and multinational organizations and provides context for their associated activities.

I believe that we, as professional military logisticians, should call for an expanded view of JIIM that includes the commercial sector. As a result, this neologism should become "JIIM-C" (pronounced "gym-see"), referring to our continued integration of and interdependence with industry in military logistics. The JIIM-C construct builds a conceptual linkage that recognizes how the industrial base and the forms of theater contracting are vital to achieving the desirable unity of effort. In short, the joint force's requirement to conduct the full range of military

operations (ROMO) or the Army's corollary of full spectrum operations (FSO) demand this addition of the "-C."

Friendly governments and nongovernmental organizations can no longer prepare, plan, or execute significant ROMO or FSO without the intimate involvement of the commercial sector. The evidence supporting this observation is clear. The Army has not deployed into conflicts without the use of the Logistics Civil Augmentation Program since the early 1990s. The number of contractor personnel supporting coalition operations in Iraq now exceeds the number of uniformed military personnel. One of the largest portions of U.S. Government discretionary spending goes toward buying materiel and services to support complex operations, both overseas and domestic. The commercial sector is a vital ingredient to success and needs to be acknowledged as such.

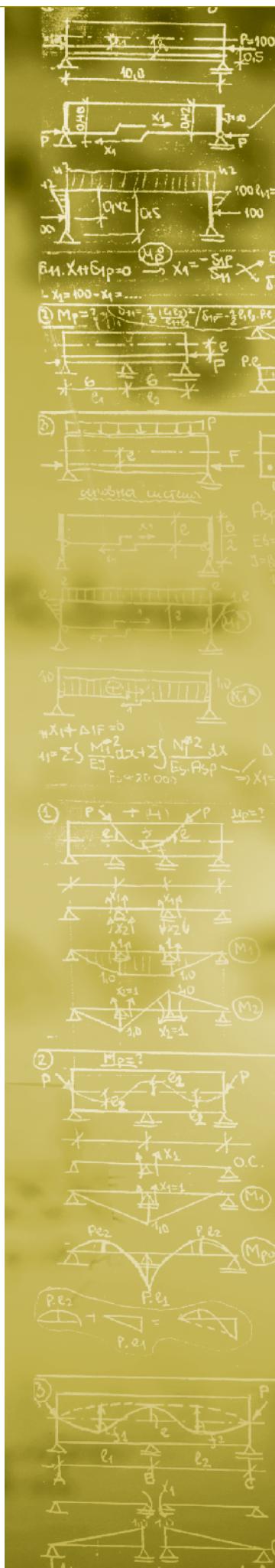
One of the implications of JIIM-C, as with any of the interorganizational seams of the other JIIM categories, is that we need a well-developed body of professionals (from all sectors) to make the integration of support work better. The "boundary spanners" (note the metaphor!) include procurement officers, officers who train with industry, and business people who find ways to interact with military organizations and other actors in the larger JIIM-C network community. These boundary spanners are essential to developing unity of effort. They must not only represent their own professions and markets; they also must practice dialoging, collaborating, and participating in decisionmaking even before complex operations emerge.

Empowered by rapid improvements in communications technology, the military logistician's charter (as it always has been) is to exercise leadership in influencing others in a more holistic community to better integrate support operations. The addition of the "C" to JIIM should be interpreted as adding a sector that is *primus inter pares* (first among equals) in our professional language in ROMO and FSO. Let us advocate the term "JIIM-C"!

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Strategic Mobility

BY COLONEL KENNETH E. HICKINS



In 2001, I authored two articles, "Strategic Mobility: The U.S. Military's Weakest Link" and "Transforming Strategic Mobility," that were published in *Army Logistician*. In those articles, I made the argument that strategic mobility was the U.S. military's greatest deficiency.

In the 8 years since those articles were published, many things have changed and many have not. Logisticians are still just as guilty as other tacticians of refighting the last war. The United States continues to fight the Global War on Terrorism (with unprecedented military spending) while conducting modernization programs, the C-17 Globemaster and large medium-speed roll-on-roll-off (LMSR) vessel procurements, and base realignment.

The Army has recently accomplished the largest transformation in its history; yet, despite all of the changes in procurements, modernizations, and modularity, my original argument still holds true: Strategic mobility has not been fixed and is the weakest link in the strategic chain of getting the right forces to the proper place in space and time to allow combatant commanders to deter, de-escalate, or decisively defeat an adversary.

What is the Strategic Mobility Problem?

The future operational environment will be characterized by a wide variety of potential adversaries with full-spectrum capabilities and motives to do major harm to the United States' homeland and national interests (and to those of our allies). Crises will develop rapidly and will require swift response by U.S. forces. These crises will result in missions ranging from humanitarian, peacekeeping, and counterterrorism to major combat.

Such operations will take place in areas where the United States has little or no footprint and in countries that have little or no developed infrastructure. They will lack major ports, rail and road networks, and modern airfields. These countries may not be conducive to rapid entry. Furthermore, the adversary could adopt anti-access and area-denial measures that would drive the United States to use forcible entry.

The 2001 Quadrennial Defense Review (QDR) Report directed the Department of Defense (DOD) to move away from a threat-based planning model to a capabilities-based model.¹ It called for DOD to possess the capability to "swiftly defeat aggression in overlapping major conflicts while preserving for the President the option to call for a decisive victory in one of those conflicts—including the possibility of regime change or occupation"² and to "conduct a limited number of smaller-scale contingency operations."³

The 2001 QDR also stated that "the U.S. military has an existing shortfall in strategic transport aircraft,"⁴ which is part of the strategic mobility problem. Strategic mobility is the combination of airlift, sealift, and pre-positioned forces. Together, they make up the strategic mobility triad. It takes the combined assets of the triad to meet the combatant commanders' requirements.

Written less than 5 years later, the 2006 QDR states, "Extensive investments in cargo transportability, strategic lift, and pre-positioned stocks over the past decade have yielded military forces capable of responding to a broad spectrum of security challenges worldwide."⁵ Did the military really fix its strategic mobility shortfalls in 5 short years? What are the true capabilities of the strategic mobility triad? What needs to be done to fix it? Is strategic mobility really a critical requirement?

¹ *Quadrennial Defense Review Report*, Office of the Secretary of Defense, Washington, DC, 2001, pp. 17–18.

² Ibid., p. 17.

³ Ibid.

⁴ Ibid., p. 18.

⁵ *Quadrennial Defense Review Report*, Office of the Secretary of Defense, Washington, DC, 2006, p. 54.

Shortcomings still exist in the current capabilities of the strategic mobility triad. After 7 years of major combat operations and transformation, these weaknesses continue. This article focuses on why strategic mobility still has not been adequately addressed and what changes are needed in the triad to make the Army once again a viable first option. It will analyze available options and provide recommendations on how to bridge the ever-widening gap between mobility capabilities and requirements.

Strategic Mobility Background

The Army has been implementing major changes during the last 10 years. It has undertaken a major transformation to move away from the Army of Excellence model to one that is lighter, more lethal and deployable, and less demanding logistically.

The Army has made its brigades modular and has embraced the idea of being expeditionary; however, one problem has not been adequately addressed. In order to project land power at the speed and tempo required by the combatant commanders to deter conflict, prevent escalation, or defeat opponents quickly and decisively, the military must be able to project its land power into or within the area in crisis. Unfortunately, this critical requirement cannot be met with the resources the United States currently possesses.

For the last 20 years, the United States has been paying lip service to addressing its strategic mobility requirements. The strategic mobility triad had been steadily improving throughout the 20th century. But since Operation Desert Storm, the military's ability to project power has atrophied.

Since the end of the Cold War when the United States reduced its forward presence overseas, the centerpiece of the U.S. defense strategy has been power projection. Power projection is the ability to rapidly and effectively deploy and sustain U.S. forces in and from multiple dispersed locations. Complementing overseas presence, power projection strives for unconstrained global reach. Global power projection provides national leaders with the options they need to respond to potential crises.

During the Cold War, the United States pursued a containment strategy. This strategy relied heavily on massive amounts of pre-positioned equipment. This equipment was stored in preconfigured sets known as pre-positioned materiel configured to unit sets (POMCUS). POMCUS were sets of equipment designated for different Army divisions and positioned in strategic European locations.

The troops based in the continental United States (CONUS) could quickly receive POMCUS via airlift. After the troops employed the pre-positioned equipment (in accordance with their general defense plan to contain the Soviet threat), follow-on sustainment materiel and additional forces would be transported by sea from CONUS to the theater of operations. This process employed all three legs of the strategic mobility triad.

At the end of the Cold War, the United States was left as the world's only superpower and the strategy changed from one of containment to one of engagement. The Clinton administration cashed in on the "peace dividend" and shrank the Army's end strength and its presence overseas. From 1990 to 1999, more than 239,000 troops returned from forward locations and 82 military installations on foreign soil were closed.⁶

National Strategy

To support the engagement strategy, the military adopted a power projection strategy. This strategy depends on the strategic mobility triad to rapidly send U.S. Armed Forces anywhere in the world. This power projection strategy was reinforced and built upon in key planning documents, speeches, and comments made by the Nation's leaders.

The 1997 National Security Strategy introduced an integrated strategic approach that was based on three concepts: shape, respond, and prepare now. Based on those concepts, the National Military Strategy of 1997 expanded on the premise that the United States would remain globally engaged to shape the international environment and create conditions favorable to U.S. interests and global security. It emphasized that U.S. Armed Forces must respond to the full spectrum of crises to protect national interests. The strategy further stated that, as the United States pursues shaping and responding activities, it must also take steps to prepare now for an uncertain future.⁷

The 1999 National Security Strategy stated:

Strategic mobility is a key element of our strategy. It is critical for allowing the United States to be first on the scene with assistance in many domestic or international crises, and is a key to successful American leadership and engagement. Deployment and sustainment of U.S. and multinational forces requires maintaining and ensuring access to sufficient fleets of aircraft, ships, vehicles and trains, as well as bases, ports, pre-positioned equipment and other infrastructure.⁸

⁶ William S. Cohen, *Annual Report to the President and the Congress*, Office of the Secretary of Defense, Washington, DC, 2001, p. C-1.

⁷ 1997 *National Military Strategy*, Joint Chiefs of Staff, Washington, DC, 1997, p. 3.

⁸ A *National Security Strategy for a New Century*, The White House, Washington, DC, 1999, p. 11.

In October 1999, the Army Chief of Staff announced a strategic mobility requirement to have the ability to move a medium brigade anywhere in the world in 96 hours, deploy a division in 120 hours, and deploy five divisions in 30 days. In 2000, the Army Science Board published a study that included a very profound and still relevant statement: “A highly lethal and survivable force incapable of rapid deployment was not relevant in a power projection Army. Likewise, a highly deployable ‘light’ force with limited lethality and survivability is not a likely deterrent to a determined foe.”⁹

The 2004 National Military Strategy states:

Overlapping major combat operations place major demands on strategic mobility. Achieving objectives in such operations requires robust sealift, airlift, aerial refueling and pre-positioned assets. Strategic mobility that supports these operations also requires supporting equipment to store, move and distribute materiel and an information infrastructure to provide real-time visibility of the entire logistics chain.¹⁰

On 23 September 2004, the commander of the U.S. European Command, Marine Corps General James Jones, testified to Congress that building a larger array of airlift and sealift platforms is an essential component of the sweeping overhaul that would, if approved, position U.S. forces at a number of small, dispersed bases across the European region.¹¹

So, is strategic mobility really a critical requirement? The Nation’s leaders and planning documents have shown the answer to be yes.

Requirements and Capabilities

The 2001 QDR set deployment goals for two different strategies. The first strategy was to simultaneously defend the homeland, conduct deterrence in four regions of the globe, and execute two major campaigns in swift fashion. The second strategy called for delivering needed forces to a theater within 10 days of a deployment order, swiftly defeating the enemy there within 30 days, and resetting the force 30 days after that victory.¹²

The 2006 QDR does not address specific requirements, but it gives the following guidance: “Mobility capabilities will be fully integrated across geographic theaters and between warfighting components and

force providers, with response times measured in hours and days rather than weeks.”¹³ It goes on to state that “future joint forces will increasingly use host-nation facilities with only a modest supporting U.S. presence, decreasing the need for traditional overseas main operating bases with large infrastructures and reducing exposure to asymmetric threats.”¹⁴

The assumptions put forth in the 2006 QDR are a bit problematic since it only addresses planning for best case scenarios. Analysts have argued that other countries could become increasingly unwilling to permit U.S. forces to operate out of their country to carry out combined operations. Some analysts have also suggested that future adversaries may not freely allow U.S. forces to build up at nearby air and sea ports as they have in recent operations (such as Desert Storm and Iraqi Freedom).¹⁵ These access issues should be addressed and not assumed away.

The strategic mobility triad necessitates transport aircraft, cargo ships, forward bases, equipment afloat, and ground transportation operated by DOD and commercial carriers. While the capabilities of the mobility triad appear to project a picture of robustness and depth, they have built-in weaknesses and do not meet the requirements laid out by DOD.

Airlift

Strategic airlift is a combination of military airlift capabilities and commercial aircraft that participate in the Civilian Reserve Air Fleet. The Mobility Requirements Study 2005 (MRS-05) identified a need for a minimum of 51.1 million ton-miles per day (MTM/D) of airlift capability. The study also observed that additional demands on the airlift system early in major theater campaigns would increase the required MTM/D to 54.5, with the possibility that the increase could be as high as 67 MTM/D.¹⁶

The chairman of the Joint Chiefs of Staff, the service chiefs, and combatant commanders reviewed the study and agreed with the requirement of 54.5 MTM/D of airlift capability as the minimum “moderate-risk” capability to support the National Military Strategy.¹⁷ The Government Accountability Office and the Air Force both agree that the military is still anywhere from 17- to 30-percent short of its required airlift, and all of the combatant commanders list the shortfall in strategic lift in their top five priorities.¹⁸ According to

⁹ “Technical and Tactical Opportunities for Revolutionary Advances in Rapidly Deployable Joint Ground Forces in the 2015–2025 Era, Volume 1, Executive Summary Report,” Army Science Board, Washington, DC, 2001, p. 33.

¹⁰ *The National Military Strategy of the United States of America: A Strategy for Today; A Vision for Tomorrow*, Joint Chiefs of Staff, Washington, DC, 2004, p. 17.

¹¹ John T. Bennett, “Increased Lift Assets Seen as Key to EUCOM Transformation Plans,” *Inside the Pentagon*, 30 September 2004.

¹² Jon D. Klaus, “Strategic Mobility Innovation: Options and Oversight Issues,” *CRS Report for Congress*, Washington, DC, 29 April 2005, p. 3.

¹³ *Quadrennial Defense Review Report*, 2006, p. 53.

¹⁴ Ibid.

¹⁵ Jon D. Klaus, p. 3.

¹⁶ *Mobility Requirements Study 2005*, Office of the Secretary of Defense, Washington, DC, January 2001, pp. 4–5.

¹⁷ Jon D. Klaus, p. 4.

¹⁸ Christian Lowe, “Military Not Able to Meet Airlift Requirement for War,” *Defense Week*, 18 December 2000, p. 1.

MRS-05, the 54.5 MTM/D airlift requirement would be reached by having the Civilian Reserve Air Fleet contribute 20.5 MTM/D and the Air Force contribute the remaining 34 MTM/D.¹⁹

At the end of fiscal year 2001, the military airlift fleet consisted of 58 C-17s, 88 C-141 Starlifters, 104 C-5 Galaxies, and 418 C-130 Hercules. Currently, the airlift fleet consists of 158 C-17s in the active Air Force, 8 in the Air National Guard, and 8 in the Air Force Reserve. No C-141s are left in the inventory. The military has a total of 111 C-5s, and there are 151 C-130s in the active Air Force, 181 in the Air National Guard, and 103 in the Air Force Reserve. That is an 18.8-percent gain in lift capability. However, Air Mobility Command leaders estimate that the true lift requirement is not 54.5 MTM/D but between 69.5 MTM/D and 76.5 MTM/D, based on actual experience in Afghanistan and Iraq.²⁰

Military airlift capabilities have improved somewhat over the last 7 years, but these gains have been outpaced by increased requirements. The level of mobility is inconsistent with the image portrayed by the planners. The news is even worse when you consider the many other factors not taken into account, for instance, maintenance posture, airfield throughput capability, and the level of airfield modernization.

Sealift

Sealift, the second triad leg, is designed to get the bulk of the needed equipment to the area of operations between 10 and 30 days after callup, and it is the primary means of sustaining the fight. Sealift capability comes from three sources: Government-owned ships, commercial ships under long-term charter to DOD, and ships operating in commercial trade.

As with airlift, the current number and capabilities of the fleet do not meet projected requirements. MRS-05 requires 10 million square feet of organic DOD sealift.²¹ It calls for 19 fast sealift ships (FSSs), LMSR ships, and 330 other ships plus contracts to meet the requirements.²² Currently, the Navy owns or charters 120 ships. Of the 120, 82 are in the Military Sealift Command active force and 38 are in the Ready Reserve Force. Only 28 of the 120 ships are medium speed or higher. The Military Sealift Command owns 8 FSSs, which can travel in excess of 30 knots, and 20 LMSR ships, which can travel at speeds up to 24 knots.²³

Together, all 8 FSSs can transport nearly the equivalent of a mechanized division (200 C-17 payloads) from the CONUS east coast to Europe in less than 6 days or to the Persian Gulf in 18 days. The LMSRs can transport the equivalent of 500 C-17 payloads up to 12,000 nautical miles at 24 knots.²⁴

Just like the airlift leg of the mobility triad, the sealift leg looks great on paper and briefs well until proper analysis is done. During the Gulf War, three out of the eight FSSs were late and a fourth broke down en route. The first wave of ships only averaged 23 knots versus the expected 33 knots, adding 5 days to the transit time. The Ready Reserve Force fared much worse, with only 25 percent of the ships deploying on time and 50 percent over 5 days late. During the second phase of activation, an additional 26 Ready Reserve Force ships were activated; only 4 were on time, and over half of them were more than 10 days late.²⁵ The problems continued after the terrorist attacks of 11 September 2001 when a Ready Reserve Force ship failed to make its deployment time after numerous crewmembers walked off the ship.

Over the last 20 years, the Government-owned fleet has been modernized somewhat with the purchase of 20 LMSRs and the procurement of a new logistics support vessel (LSV). However, these ships are slow and only account for 25 percent of the total fleet. And the fleet is not young. The average Ready Reserve Force ship is over 37 years old.²⁶

Pre-positioning

The final leg of the mobility triad is pre-positioning. Pre-positioning is made up of land-based pre-positioned equipment and the Military Sealift Command's Afloat Pre-positioning Force (APF). Land-based stocks include seven brigade combat teams (BCTs) spread out in Europe, Southwest Asia, and Korea. In the APF, all ships are self-sustaining. They all have organic cargo-handling capability that enables them to discharge their cargo despite limited or nonexistent port facilities.

Army pre-positioned stocks (APS) consist of pre-positioned equipment that is stored in preconfigured unit sets that are either ashore or afloat. APS are configured as combat brigade sets with ammunition, but no to-accompany-troop equipment (individual weapons and equipment). APS are divided into five regional

¹⁹ William S. Cohen, p. 21.

²⁰ John A. Tirpak, "The Airlift Gap," *Air Force Magazine*, October 2004, p. 34.

²¹ *Mobility Requirements Study 2005*, p. 6.

²² Ibid., p. 7.

²³ Military Sealift Command, "Ship Inventory," www.msc.navy.mil/inventory, accessed on 23 December 2008.

²⁴ Norman Polmar, *The Naval Institute Guide to the Ships and Aircraft of the U.S. Fleet*, Naval Institute Press, Annapolis, 2005, p. 296.

²⁵ Ronald F. Rost, *Sealift in Operation Desert Shield/Desert Storm: 7 August 1990 to 17 February 1991 Research Memorandum 91-109*, Center for Naval Analyses, May 1991, p. 28.

²⁶ Defense Science Board, "Defense Science Board Task Force on Mobility," Office of the Under Secretary of Defense, Washington, DC, 2005, p. 77.

locations: CONUS, Europe, afloat near Diego Garcia (an island in the Indian Ocean), Northeast Asia, and Southwest Asia. With the exception of the CONUS location, all of the sites contain sets of equipment.

Land-based pre-positioning programs are maintained in Europe, Southwest Asia, and the Pacific region. In Europe, the Army stocks equipment for three BCTs (two in central Europe and one in Italy). In Southwest Asia, the Army stocks equipment for two BCTs (one in Kuwait and one in Qatar). The Army has stock for one BCT in Korea.²⁷

The Army's current strategy of becoming more expeditionary relies heavily on pre-positioned equipment and materiel that is ready to be issued to Soldiers. The APS program supports the National Military Strategy by strategically pre-positioning vital war stocks afloat and ashore worldwide, thereby reducing the deployment response times of the modular, expeditionary Army. With the National Defense Strategy ordering a greater proportion of troops to be based in the United States, APS abroad and afloat are indispensable to America's global force-projection capability.

APS has a few challenges. The first, and the hardest to overcome, is ships. During Operation Restore Hope in Somalia, three pre-positioned LMSRs were unable to unload their cargo because their draft prevented them from entering any port. After 2 weeks of trying to locate a suitable port, the ships returned to Diego Garcia without discharging their cargo.²⁸ The advantage provided by the size of these ships is also a disadvantage since it limits the choice of ports.

DOD conducted a worldwide port study of potential seaports of debarkation (SPODs) in the U.S. Central Command (CENTCOM) and U.S. Pacific Command (PACOM) areas of responsibility (as these areas are viewed as the most likely areas for future conflicts). Ports are considered militarily significant today if they can accommodate the LMSR, which has a draft of 35 feet. Sea vessels with shallow draft and limited overall length can access many more ports that are not considered militarily significant.²⁹ For example, in Korea, shallow-draft vessels expand the number of accessible ports by 84 percent.³⁰

The amount of equipment the LMSRs can carry also must be taken into account. The space needed for reception, staging, onward movement, and integration is immense. Because of the United States' increased dependency on large modern ports, a potential adversary's strategy to deny or delay the United States in deploying forces becomes very simple. Using mines,

THE UNITED STATES CANNOT FIX EACH LEG OF THE TRIAD, BUT BY FOCUSING ON INTRATEATER LIFT AND POSITIONING OF THE PRE-POSITIONED EQUIPMENT, THE UNITED STATES CAN USE THE STRENGTHS OF EACH LEG TO FIX THE WHOLE.

submarines, special forces, terrorism, sabotage, or tactical ballistic missiles, the enemy could greatly hamper the United States' ability to resupply by sea.

The second challenge is that the transport problem crosses over to the land-based pre-positioned equipment. During operations in Kosovo, the United States deployed two LSVs to provide intratheater lift to transport heavy equipment between the Balkans and Italy. It took 23 days to move the LSVs from CONUS to the equipment site in Italy.³¹ The problem with land-based pre-positioned stocks, unless the conflict is within 100 miles of the site, is that they are difficult to move at the speed required by the combatant commander.

Currently, APS are exhausted in all theaters. The plan for APS at the beginning of combat operations in Iraq was to issue equipment from APS and then reconstitute the APS as combat units rotated back to CONUS. This did not happen. The APS were further depleted in 2007 when the stock at Diego Garcia was offloaded to constitute BCTs at Fort Riley, Kansas, and Fort Hood, Texas. Significant critical equipment shortages across the Army also affect APS, including shortages of up-armored high-mobility multipurpose wheeled vehicles, materials-handling equipment, and crew-served weapons.

Joint Logistics Over-The-Shore

Unless sealift and APS assets have access to a modern port, they are dependent on another deployment multiplier: joint logistics over-the-shore (JLOTS). JLOTS is a unified commander's joint employment of Army and Navy logistics over-the-shore assets to deploy and sustain a force. JLOTS operations allow U.S. strategic sealift ships to discharge through inadequate or damaged ports or over a bare beach. JLOTS watercraft can also be used operationally to reposition units and materiel within a theater.

As with all legs of the mobility triad, JLOTS also has serious challenges. JLOTS relies on the Army's

²⁷ William S. Cohen, p. 23.

²⁸ Kenneth Allard, *Somalia Operations: Lessons Learned*, National Defense University Press, Washington, DC, January 1995, p. 50.

²⁹ *Quick Reaction Requirements Analysis for the Theater Support Vessel*, Department of the Army, Washington, DC, 4 April 2003, p. 1.

³⁰ Ibid., p. 7.

³¹ Marc Strass, "Army wants 14 High-Speed Catamarans to Speed Intra-Theater Brigade Lift," *Defense Daily*, 20 November 2000.

watercraft fleet, which is made up of 6 LSVs and 35 landing craft utility 2000 series (LCU–2000) vessels. The LSV transports combat vehicles and sustainment cargo worldwide. It is used primarily for intratheater line haul of cargo and equipment for tactical resupply missions to remote, underdeveloped coastlines and inland waterways. The LSV is also used for JLOTS missions by discharging or backloading strategic sealift vessels like the LMSR. All tracked and wheeled vehicles, including Abrams tanks, can be transported on an LSV during JLLOTS operations. The main problem with LSVs is that four of the six vessels will reach their economic useful life (EUL) in 2013.

The LCU–2000 has similar capabilities and uses as the LSV, but its deployability is limited by distance, weather, and sea conditions. The LCU–2000 fleet will reach its EUL by 2018.³²

JLOTS faces two other challenges. The first is lack of importance. Many years have passed since the last time the United States was forced to use substandard ports, so JLLOTS, to a large degree, has been forgotten. A complete JLLOTS operation has not been conducted in years. The second challenge is sea states around the world. According to the Defense Science Board Task Force on Mobility, sea states at the north end of the Persian Gulf would allow JLLOTS operations only 32 percent of the time, and sea states off the east coast of Korea would allow them less than 40 percent of the time.³³

Options

Each leg of the mobility triad has deficiencies. Airlift requirements outnumber capabilities. The utility of sealift is degraded by lack of access to ports, inadequate port capacity, poor conditions of facilities at seaports of embarkation and debarkation, and the age of the U.S. fleet. Land-based pre-positioned equipment is not positioned correctly, takes a lengthy amount of time to arrive in theater, and is depleted. The United States needs a bridging strategy that delivers viable solutions to the combatant commanders.

DOD could pursue many options in solving the strategic mobility dilemma. The first is to do nothing. According to the 2006 QDR, strategic mobility has no problems and many analysts would point to current operations in Iraq and Afghanistan to prove that point. But they would be wrong in their choice of examples because the current fights are not expeditionary fights. So what other options are possible to address the problem?

To fix airlift, either capabilities must be increased or requirements reduced to match current capabilities.

The airlift fleet has already gone through extensive modernization with the retirement of the C–141, the procurement of the C–17, and the upgrades to the C–5. Short of buying more airframes, the United States cannot do much more to increase its airlift capabilities, so the best option to fix airlift is to use the other legs of the triad to mitigate the airlift shortfalls. That being said, the United States still needs to consider the future needs of airlift and pursue the development and procurement of future platforms, such as the global range transport, ultra-large airlifter, C–17 aircraft with a payload/range extension program, and super short take-off and landing aircraft.

The United States also needs to continue to pursue the acquisition and development of future sealift platforms like the shallow draft high-speed ship (SDHSS), monohull fast sealift ship, and other high-speed Navy vessels.

Recommendation

Until technology allows the United States to move forces from CONUS to anywhere in the world in less than 7 days, regardless of SPODs and aerial ports of debarkation (APODs), forward positioning of equipment is the key. The way to fix the mobility triad is to take the holistic approach. The United States cannot fix each leg of the triad, but by focusing on intratheater lift and positioning of the pre-positioned equipment, the United States can use the strengths of each leg to fix the whole.

A current off-the-shelf capability can provide a bridging strategy until future platforms become attainable. That capability is the high-speed catamaran. Coupling the catamaran with APS and positioning them in the different combatant command areas of responsibility (AORs) would provide a force that a combatant commander could rapidly deploy. It would also provide organic intratheater lift capability once the vessels discharge the APS, and that would decrease the airlift requirements. The catamaran would provide a platform to rapidly deliver aid supplies during natural disasters without using warships, which can send the wrong message to those in need.

The current commercial off-the-shelf theater support vessel (TSV) is also an option for bolstering sealift capability. A recent example of a TSV-type capability was demonstrated in Operation Iraqi Freedom. The *Spearhead*, a commercial fast shallow draft ferry that the Army was leasing from an Australian firm, moved the 101st Airborne Division's military police from Djibouti to Kuwait, making the 2,000-mile trip in 2½

³² *Operational and Organizational (O&O) Plan For The Theater Support Vessel (TSV)*, Department of the Army, Washington, DC, 14 November 2002, p. 12.

³³ Defense Science Board, p. 131.

³⁴ Nate Orme, "Army Catamaran hauls Equipment Double-Time," *Defense Link*, www.defense.gov, 8 September 2003.

³⁵ *Quick Reaction Requirements Analysis for the Theater Support Vessel*, p. 1.

days. An LSV would have needed 10 days to make the voyage and could have only transported equipment, requiring the troops to fly separately.³⁴

In 2003, the Army conducted a port study of CENTCOM and PACOM AORs to examine the accessibility of 282 ports in 26 countries. An LMSR can only access 27 percent of these ports because of its draft of 9.1 to 10.5 meters. The TSV, however, can access 74 percent of the ports because its draft is between 4.6 and 6 meters.³⁵

The high-speed catamaran would also provide access to more austere ports, thus limiting the area-denial options that potential adversaries would have. If we look back at World War II and the Inchon landings in Korea, the United States has had to conduct forced entries before without the use of ports. Why do we now discount that possibility?

During the Vigilant Warriors 01 wargame, U.S. and allied forces employed a mixture of current lift assets and promising future concepts. Of all current and future airlift and sealift capabilities, the SDHSS and the TSV most significantly affected force closure rates because of their speed, throughput capability, and capacity. The SDHSS and TSV were the only platforms that could sufficiently deliver troops and equipment to bring immediate combat power to bear. While in transit, commanders were able to conduct en route mission planning and receive intelligence updates. The TSV provided transformational capability and operational maneuver of Army formations. Since the TSV can carry approximately 7 times as much as the C-17 and 24 times as much as the C-130, it had the added benefit of reducing intratheater airlift requirements elsewhere in the theater.

I propose acquiring enough high-speed catamarans to carry four BCTs. Each combatant commander would have a BCT afloat that could rapidly deploy to an intermediate staging base to marry up the equipment with troops deployed out of CONUS, and each of the sets could be mutually supporting if the crisis called for more forces. For example, the PACOM set could move quickly to the CENTCOM AOR if needed and vice-versa.

The strategic mobility triad has many weaknesses. Waiting for future platforms is not the answer. This dilemma must be analyzed holistically as a joint problem. It is not a single service problem and, therefore, cannot be approached as one.

Strategic mobility has not been fixed and is the weakest link in the strategic chain of getting the right forces to the proper place in space and time in order to

allow the combatant commander to deter, de-escalate, or decisively defeat an adversary.

The 2006 QDR's statement, "Extensive investments in cargo transportability, strategic lift, and pre-positioned stocks over the past decade have yielded military forces capable of responding to a broad spectrum of security challenges worldwide,"³⁶ is at best misleading and at worst wishful thinking. Eighty percent of all countries have borders on a coast, 80 percent of the world's capitals lie within 350 miles of a coast, and 95 percent of the world's population lives within 500 miles of a coast.³⁷ Currently, the United States cannot move significant ground forces to crisis areas in a timely manner.

The most recent National Security Strategy states that either host-nation or allied APODs and SPODs will be used to quickly move forces into a crisis area. Many of the countries involved in past crises or that have a high potential for future crises (such as Somalia, Iraq, Iran, Israel, Yemen, Myanmar, Pakistan, India, Sierra Leone, Sri Lanka, China, Korea, Taiwan, Georgia, Sudan, East Timor, Venezuela, and Cuba) border the world's oceans and are in remote, unimproved areas of the world. Half of these countries sit astride strategic waterways, and their locations could impede the United States and its allies.

If the United States had to engage any of these countries militarily, the combatant commander would need all the assets that the mobility triad has in order to respond. If the United States wants to continue to provide the world with political, economic, informational, and military leadership, it needs the ability to send military forces into the numerous trouble spots throughout the world.

The United States cannot afford to rely on host nation or allied support. Nor can it rely on limited air transport and slow sealift to get our forces to the crisis area. The United States must stop paying lip service to the shortfalls in our strategic mobility triad and leverage the available technology and create a truly interdependent and complementary mobility triad that is critical for operational and strategic success.

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³⁶ *Quadrennial Defense Review Report*, 2006, p. 54.

³⁷ *Revised Operational Requirements Document (ORD) for the Theater Support Vessel (TSV) ACAT III*, Department of the Army, Washington, DC, 14 March 2003, p. 10.

Logistics in the PLA

BY DR. MARTIN ANDREW

The Chinese People's Liberation Army's (PLA's) emphasis on *xinxihua zhan* (informationalized warfare) has now been superceded by the concepts of *Pei Shu* and *Zhi chi*.

Pei Shu translates to "attaching troops to a subordinate unit," meaning creating independent battle groups within the division or augmenting a division seamlessly with heavier forces. *Zhi chi* means "to support," which describes the creation of a battlefield logistics organization able to supply and support forces deep inside an enemy's rear area. This support is envisioned to be based at the corps level and include brigades, which are further split into combined arms battle groups that are generally based around a battalion headquarters (and normally a maneuver element).

Logistics, being the "poor cousin" of combat arms, suffered from inadequate funding from the birth of the PLA until very recently. The reorganization of units into mechanized brigades and the emphasis on out-of-area operations meant that logistics had to be updated. In 2005, the General Logistics Department (GLD) embarked on the modernization of its combat logistics capability to enable sustained operations on China's periphery and beyond its borders. This article looks at how, in 4 short years, the PLA has created a modern logistics organization capable of supporting extended large-scale operations outside its main operating areas.

Peace Mission 2007

The Peace Mission 2007 exercise between Russia and China in Russia's Chelyabinsk Oblast was held in July 2007, and besides being the first major test of the *Pei shu* concept, it was used to show that the PLA could now create and deploy a composite *zhandui* (battle group) of light armor and helicopters. This battle group was created from existing forces and was able to conduct light infantry operations, including counterterrorism, reconnaissance, and screening operations across a wide area.

For this exercise, the PLA deployed—

- ❑ A wheeled mechanized infantry battalion comprising 40 type 92 wheeled infantry fighting vehicles and 15 type 92A wheeled armored personnel carriers.
- ❑ Two companies of 18 PL02 100-millimeter assault guns, each mounting an enclosed turret with a 100-millimeter cannon and a coaxial 7.62-millimeter machinegun.
- ❑ One battalion of 16 Z-9W attack helicopters.
- ❑ One battalion of 16 Mi-17 Hip multimission helicopters.
- ❑ A company of 12 ZBD-03 airborne combat vehicles, each with a mounted 30 by 165-millimeter automatic cannon and a coaxial 5.8-millimeter machinegun.

The 55 wheeled vehicles and 18 PL02 assault guns use the WZ551 six-wheeled armored chassis.¹ The entire ground force was moved by train, and the helicopters were flown from Xinjiang.

The type 92s can transport a mechanized infantry battalion of three companies with the support provided by two companies' worth of the assault guns, which is an unusually large amount of *huoli* (firepower) for a mechanized infantry battalion. The type 92As provided transportation for the battalion headquarters and company support weapons.

Deployed infantry support weapons included the QBZ87 35-millimeter automatic grenade launcher, PF98 120-millimeter antitank rocket launcher, and type 74 backpack flamethrowers. The Mi-17s could lift two infantry companies with their support elements, providing the

¹ Compiled from: "Heping shinming-2007 duoguo lianhe kandian jiexi," *Binggong keji*, Zhongdi 2007, pp.18–21; Kuachu guomin-zhanxiong feng—"heping shinming _ 2007 yanxi zaixian shang," *Tanke zhuangjia cheliang*, 2007 Niandi, 9 Qi, Zhongdi 259, pp. 17–19; "Jiefangjun kuaifan zhuangbei liangxiang," *Guoji zhanwang jianduan keji baodao*, 2007 Niandi, 16 Qi, Zhongdi 570, p. 21; "Wanli furang-heping shinming-2007 fankong junyan," *Hangkong shijie*, 2007 Niandi, 9 Qi, Zhongdi 99, pp. 16–23.

brigade commander with six company-level maneuver elements. The Z-9W attack helicopters provided aerial reconnaissance, fire support, and liaison.

The brigade provided its organic resupply and medical evacuation capability through the type 92A armored personnel carriers and Mi-17 helicopters and used its own logistics support for ammunition and spare parts.

Current Battlefield Logistics

On 11 August 2009, the PLA launched an exercise called Stride-2009. One of the exercise's major objectives was to improve the PLA's ability to project long-range power. Stride-2009 was China's largest-ever peacetime tactical military exercise and its largest deployment of armor since the 1979 Sino-Vietnamese War. The exercise involved over 50,000 personnel.² The general staff headquarters planned and wrote the manifests over a 3-month period to prepare the rail network and arrange for China's civilian airlines and military transport fleets to provide passenger and specialist cargo flights.

A mechanized division from Shenyang Military Command (northeast) was transported to Lanzhou Military Command (northwest), and troops from Jinan Military Command (east) and Guangzhou Military Command (south) were exchanged. The move was important because it enabled the PLA to identify and then rectify difficulties of moving their two elite combined arms mechanized corps between Xinjiang and Shenyang. The purpose was to identify problems and enable rapid reinforcement in the event of a crisis.

Each deployment lasted 2 months. Upon arrival, they were put through a series of live-fire exercises. The forces in Jinan were required to support an invasion of Taiwan and the forces in Guangzhou in the event of an armed intervention into North Korea. The personnel were moved, whenever possible, by air, and the heavy equipment was moved by rail. However, the lightly armored troops deployed to Jinan Military Command went by China Railway's high-speed trains, which travel up to 350 kilometers per hour.

In the new combined arms mechanized corps, the logistics brigade is held at the corps level and logistics support is supplied directly to the brigades and battle groups using a "pull system." Besides military operations, the new logistics brigade tasks involve providing logistics support for military operations other than

war, which include flood control and resulting rescues, earthquake and disaster relief, nuclear and chemical terrorism, and counterinsurgency operations.

For the exercise, the logistics brigade issued 34 kinds of equipment and 4 categories of special instruments to dedicated companies, platoons, squads, and individuals. It evaluated command and control issues as well as the amount of equipment required in the event of a particular mission.

Before the exercise, the logistics brigade stressed the need to outsource equipment and facilities for military operations other than war, sign support agreements with civilian equipment and facility supply and maintenance providers, and build (according to the brigade) "a reliable outsourcing support network for equipment and facilities."³ The logistics brigade for the Xinjiang combined arms mechanized corps initiated a similar system that included the provision of logistics support on over 1,900 miles of road network and at elevations of 14,000 feet and higher.⁴

Battlefield Resupply

Most of the vehicles used for resupply are *Dong Feng* 4 x 2 and 4 x 4 medium trucks, which are based on various models of Mercedes-Benz trucks. Resupply near the forward edge of the battlefield has been made easier with the recent introduction of the type 06 tracked armored supply vehicle.⁵ The vehicle is larger but similar in appearance to the type 85 armored command vehicle. It has a modified hull from the type 83 152-millimeter self-propelled gun-howitzer, six armored hatches on the roof, and a crane mounted on the left side behind the commander's cupola. The vehicle's main role is to supply ammunition for the division's self-propelled guns.

Weighing in at 19 tons fully loaded, the type 06 has a maximum road speed of 65 kilometers per hour and maximum road range of 500 kilometers. It can climb a 32-degree slope and can be on a 25-degree slope without rolling over sideways. The vehicle uses 3 crewmembers, and the vehicle commander has a 12.7 by 108-millimeter machinegun attached to his cupola on a circular frame. Four twin 76-millimeter smoke dischargers complete the vehicle's armament.

Forward-area logistics will be improved further with the acquisition of the 4 x 4 Hummer license and production facilities by Sichuan Tengzhong Heavy Industrial Machinery Company, Ltd., from General Motors. The PLA had been sorely lacking in the area of logistics

² "PLA Kicks off Largest Long-Range Tactical Military Exercise," *China Military Online*, 11 August 2009, http://eng.chinamil.com.cn/news-channels/china-military-news/2009-08/11/content_4020975.htm, accessed on 18 August 2009; "Largest Ever Mobilization of Troops Sees 50,000 Move Across Nation," *China Military Online*, 12 August 2009, http://eng.chinamil.com.cn/news-channels/china-military-news/2009-08/12/content_4021351.htm, accessed on 18 August 2009.

³ "Brigade Carries Out Equipment Support Exercise Under Complicated Conditions," *Chinese Military Online*, 27 August 2009, http://eng.chinamil.com.cn/newschannels/china-militarynews/2009-08/27/content_4029337.htm, accessed on 28 August 2009.

⁴ Xu Bicheng and Zhang Yingxiang, "Support Brigade Explores Joint Support Methods in Joint Operations," *PLA Daily On-Line*, 18 December 2008, http://english.chinamil.com.cn/site2/news-channels/2008-12/18/content_1590465.htm, accessed on 19 December 2008.

⁵ "Zhongguo 06 kuan zhuangjia buj che," *Bingqi Zhishi*, 2007 Niandi, 3 Qi, Zhongdi 233, pp. 28-36.

vehicles.⁶ The use of personnel as porters to move munitions and supplies forward is now a thing of the past.

Base Feeding

Until recently, providing personnel with food during military operations had been largely the responsibility of the provincial militia. This was a huge problem for units operating on China's periphery, and the 1979 Sino-Vietnamese War exposed all the problems that occur when relying on the militia for logistics support. The logistics chain broke down and struggled to supply even modest amounts of food to the front line. And the PLA logistics chain had not been improved since the Korean War.

Until 2005, units in mountainous and remote areas suffered from a lack of fresh food and, throughout the PLA, there was a general lack of suitable and standardized meals and menus.⁷ In November 2005, to improve nutrition, the GLD directed that "a cup of soymilk and an egg be provided for each serviceman at breakfast." Companies were also directed to "prepare fruit for servicemen two to three times a week if conditions permit."⁸

The standard and quantity of food for Chinese soldiers had decreased markedly since the Korean War and were long overdue for improvement.⁹ In established messes, catering for more than 500 personnel, electronic ovens, freezers, and machines to make noodles and bean curd were introduced.¹⁰ Rear-echelon units received the equipment first, and the arms messes, staffed by the units at the company level, benefited from these improvements as funding permitted.

In July 2009, the rations were further improved. The PLA's basic daily ration for enlisted personnel and commissioned officers started to include more fresh fruit and an increased proportion of animal protein in the form of dairy, poultry, and seafood. Some pork and beef meals were replaced by poultry and low-fat, high-protein seafood.¹¹

Field Feeding

In the field, new mobile kitchen vehicles have been introduced. One vehicle enables 4 cooks to prepare 4

different hot meals and a soup for 300 people in less than an hour.¹² The long-held tradition of squads eating from the same rice bowl was only discontinued in 2003 because of the fear of spreading diseases like severe acute respiratory syndrome (a fact that raises questions about the PLA's prior commitment to controlling disease and contamination). In PLA infantry units, which operated in groups of four or five, eating from the same rice bowl was seen as a way of emphasizing group cohesion.

More importantly, new field water purification and environmental health equipment has been introduced. The PLA's Red Army Division, which was used in opposing-force training, was the first unit to use new field water purifying equipment, field showers that use solar energy for heating, and other equipment to improve field environmental health.¹³ These systems enable sustained operations without having to depend on the local population for rations or water.

A GLD-run deployment sustainability exercise and the joint Sino-Russian Peace Mission exercise in August 2005 revealed the improvements required for the PLA to perform logistics missions on extended operations away from established infrastructures. Areas highlighted included the need for improved combat uniforms and personal protective equipment, high-mobility transportation, modular equipment, and better systemization of the logistics supply chain.¹⁴ Supplying personnel with adequate food supplies in the field also received special mention; it had been a constant issue in the PLA since its inception.

To enable sustained operations in the field without the need for resupply, the PLA introduced in 2005 the 05 series of prepackaged field rations, which were in short supply for the exercise.¹⁵ The rations use ring-pull cans containing such delicacies as seafood, bird, fruit, green vegetables, and meat with rice. Soup bases to accompany the main courses are available in individual soft foil pouches. MCF-240 military compressed food ("iron ration") blocks are also available in a halal version. These are heated in a flameless heater

⁶ Aaron Smith, "GM Unloads Hummer to Chinese Buyer," *CNN.Money.com*, http://money.cnn.com/2009/06/02/news/companies/gm_hummer/index.htm, accessed on 25 November 2009.

⁷ Guan Daxue and Fan Juwei, "PLA Cooks Up New Menus to Beef Up Soldiers," *PLA Daily On-line*, 6 November 2005, <http://www.chinamil.com.cn>, accessed on 6 November 2005.

⁸ Guan Daxue and Fan Juwei, "Making Dishes More Nutritious for Officers and Men," *PLA Daily On-line*, 3 November 2005, <http://www.chinamil.com.cn>, accessed on 4 November 2005.

⁹ In December 1952 the daily ration was 900 grams of cereal, 670 grams of meat, vegetables and oils with 180 grams of condiments (soy sauce, salt, spices). C.R. Shrader, *Communist Logistics in the Korean War*, Greenwood Press, Westport, CT, 1995, pp. 94–95.

¹⁰ Guan Daxue and Fan Juwei, "PLA Cooks Up New Menus to Beef Up Soldiers."

¹¹ "Food Quota Standard of PLA Troops to be Adjusted," *PLA Daily*, 4 June 2009, http://english.chinamil.com.cn/site2/news-channels/2009-06/04/content_1787079.htm, accessed on 7 June 2009; "PLA to March on Better Fed Stomachs," *PLA Daily*, 5 June 2009, http://english.chinamil.com.cn/site2/news-channels/2009-06/05/content_1787761.htm, accessed on 7 June 2009.

¹² Ding Shunguo and Zhao Gonghu, "Military unit develops modern cooking equipment for field operation," *PLA Daily On-Line*, 4 January 2005, <http://www.chinamil.com.cn>, accessed on 5 January 2005.

¹³ "New type of equipment enters service in training," *PLA Daily On-line*, 25 August 2005, <http://www.chinamil.com.cn>, accessed on 5 January 2005.

¹⁴ Bao Weidong and Liu Mingxue, "All-Army Quartermaster Equipment Inspection Yields Rich Fruits," *PLA Daily On-Line*, 25 September 2005, <http://www.chinamil.com.cn>, accessed on 26 September 2005.

¹⁵ "Zhandouli zhiyuan wojun junyong shipin zonghentan (xia)," *Bingqi Zhishi*, 2006 Niandi, 6 Qi, Zhongdi 224 Qi, pp. 53–55.

pouch similar to meals ready-to-eat. The pouch can heat meals to 60 degrees Celsius.¹⁶ For the squad, there are 10-man boxed rations as well as the individual rations mentioned earlier.

PLA forces on extended operations can now eat well without having to forage off the population. Specific cold-weather ration packs are now available and come in self-heating, tinned, soft packaging.¹⁷ A battery-operated thermostat similar in size to a portable calculator can be plugged in to special heating pouches, enabling food, such as rice, to be heated up to 60 degrees Celsius. Motorized and mechanized units previously had eaten cold rations or used heat from their running engines to cook their meals. Soldiers involved in cold-weather operations require meals with more carbohydrates, fats, and protein to increase red blood cell formation.

Battlefield Engineering

The PLA has an array of vehicles to enable and enhance battlefield mobility. For gap and river crossings, the PLA employs two types of pontoon bridges: the type 84 bridge-laying tank and the truck-mounted scissors-type folding bridge that incorporates built-in pylons.¹⁸ For initial crossings, the PLA has motorized small rigid inflatable boats and an amphibious four-wheel drive vehicle that is almost identical to the U.S. Army's World War II amphibious jeep.¹⁹ Replacing the type 62 light tank with the type 03P amphibious tank will enable reconnaissance units to cross river barriers and paddy fields more easily but at the expense of armored protection (although explosive reactive armor kits are reportedly available).²⁰

The GJT211A armored bulldozer is used for rapidly breaching minefields and battlefield engineering tasks.²¹ Equivalent to the M9 armored combat earth-mover, it is equipped with a large bulldozer blade in the front and a tray over the rear of the hull that houses the type 84A rocket-launched mine-clearing explosive hose system.

To ensure adequate all-weather, high-altitude support, the PLA regularly operates in late autumn in Xinjiang in extreme weather conditions. In October 2005, an engineer regiment of the Xinjiang Military Area Command conducted a high-altitude, cold-weather exercise at 4,000 meters in the Kunlun Mountains.²²

The exercise comprised over 1,000 men with over 100 pieces of engineering equipment. The engineers developed new methods for providing support, including a rolling device that almost halves the time it takes to build a bridge, new types of camouflage suited to the terrain, and a new front-end loader.²³

To repair vehicles in the field, the PLA has developed two vehicles to provide repair facilities for armored vehicles in the forward battle area. The ZJX93 armored rapid battlefield repair vehicle is based on the ZSD89 armored command vehicle hull and is designed to provide rapid repair of armored vehicles and quickly bring a stricken vehicle back into operation without an armored recovery vehicle. The vehicle's crew of five has a comprehensive array of tools. It contains an automatic oil filtration system, a battery charger, test sets for the target, radio and stabilization systems, and tools to enable rapid entry into the disabled vehicle.

Fully amphibious and weighing in at just over 15 tons fully loaded, the ZJX93 has a maximum road speed of 55 kilometers per hour and can travel 6 kilometers per hour in water. The vehicle includes a turret-mounted type 59 12.7-millimeter heavy machinegun in a semi-enclosed turret, eight 76-millimeter smoke grenade dischargers, and three type 77/85 submachine-guns for close-in protection. It is a very busy vehicle with a smaller profile than the WZ8581 armored maintenance vehicle.

The WZ8581 is based on the extended ZSD89 hull of the WZ252 tracked ambulance and has six road wheels instead of five.²⁴ The vehicle is basically a garage on tracks; the crew can access a comprehensive array of tools, including an arc welder, an air compressor, and a rapid battery charger.

Designed to enable field maintenance of armored vehicles during operations in the field, the WZ8581 visually differs from the WZ252 ambulance by having a 1-ton capacity hydraulic crane on the left side of the vehicle and a turret-mounted QJC88 12.7 by 108-millimeter heavy machinegun. The WZ8581 is also equipped with four twin 76-millimeter smoke grenade dischargers. The vehicle is amphibious, weighs 17.5 tons fully loaded, and has a maximum road speed of 60 kilometers per hour and a maximum speed of 5 kilometers per hour in water.

¹⁶ Ibid.

¹⁷ "Zhantou lizhi yuan (liu) zi jiye shipin," *Bingqi Zhishi*, 2007 Niandi, 2 Qi, Zhongdi 232, pp. 66–67.

¹⁸ "Dujianghe jingong zuozhan (xia)," *Qing Bingqi*, 2005 Niandi, 8 Qi, Zhongdi 200, pp. 46–49.

¹⁹ "Dujianghe jingong zuozhan (shang)," *Qing Bingqi*, 2005 Niandi, 8 Qi, Zhongdi 199, pp. 5–9.

²⁰ "Guochan 03P xingshuiliu tanke," *Qing Bingqi*, 2008 Niandi, 4 Qi, Zhongdi 246, pp. 20–21.

²¹ "Zhongjia gongcheng baozhung zhangbei," *Tanke Zhuangjia Cheliang*, 2004 Niandi, 12 Qi, Zhongdi 226, pp. 5–10.

²² Sui Jianqiang and Xu Yunjian, "Engineer regiment of Xinjiang MAC toughens troops in freezing plateau areas," *PLA Daily On-line*, 26 October 2005, <http://www.chinamil.com.cn>, accessed on 26 October 2005.

²³ Ibid.

²⁴ "Tanke zhuangjia chelingde 'hushi' he 'baomu' Wuguo yanshida WZ8581 ludaishe tanke jishubaoyangche," *Tanke Zhuangjia Cheliang*, 2008 Niandi, 10 Qi, Zhongdi 272, pp. 37–41.

Battlefield Medical Services

PLA battlefield medical services have also been modernized. Currently, there are three stages of medical service before an injured person is evacuated to a major army medical facility. The medics collect the patients and provide immediate first aid, and then they transport the patients to the battalion aid post where they are stabilized. The patients are then moved to the field or divisional hospital for early treatment of their wounds.

With the reorganization of the PLA into a brigade and corps structure, the corps will now own the early stage treatment facility. The PLA is investing in its battlefield health services with the addition of armored tracked ambulances that use both the type 85 and 89 chassis. The ambulance with the type 85 chassis is armed with a 12.7-millimeter machinegun, and the type 89, which is fully amphibious, is used to transport wounded personnel to and from landing craft or over water crossings.²⁵

The extent of the PLA's need for modernization was demonstrated in August and September 2005, when soldiers deployed to the frontier border areas of the Guangxi Zhuang Autonomous Region were given individual medical kits procured by the Party Committee of the Wenshan Military Sub-Command Political Department.²⁶ Quality medical kits should have been standardized and available long before 2005, but the kits that the PLA had been procuring were no improvement over similar kits supplied to PLA soldiers in the 1960s.

Computerized Procurement

To cut costs while improving the provisioning of supplies in the field and in base areas, the PLA now uses computerized outsourcing and procurement to buy equipment, including tools, stationery, and engineering equipment, directly from the civilian sector. A division stationed in the eastern part of Liaoning Province in August 2005 tested the initial system with a mock emergency procurement drill (staged by the GLD) with local suppliers in northeast China.²⁷ The success of the exercise demonstrated that the system was viable and pointed the way for future "integrated army-civilian emergency procurement systems."²⁸ The system has since undergone expansion and improvement and is now in service throughout the PLA.

The need to protect intellectual property when outsourcing equipment production has become an issue in

the PLA, as it has in other militaries. The new camouflage uniform is solely for the military, but the uniform can be found for purchase through Chinese defense magazines or in markets.²⁹ Chinese defense clothing suppliers will provide any style of military camouflage a buyer seeks.

Mobilization

The PLA, like the former Soviet army, keeps the majority of its most modern equipment in storage for use in a potential war; earlier versions and only small amounts of the more recent equipment are used in training. Although this ensures that new equipment is available during times of mobilization, it also leads to problems. Personnel are unfamiliar with the modernized equipment, and breakdowns occur from poor maintenance. Furthermore, the mass mobilization of modernized military equipment alerts an opponent to the army's intentions.

The PLA was aware of these problems, and in the last 3 months of 2005, the State National Defense Mobilization Committee issued a series of proposals to improve rapid manpower mobilization systems. Although the PLA has deployed its two major armored corps forward and practiced rapid deployment with the Stride-2009 exercise, the units only deployed sufficient equipment to practice the live-fire portion of the exercise. Various photographs of recent exercises show the old type 59 tank (rebuilt copies of the Russian T-54A) acting as a maneuver element for the red forces (the "good guys").

By 2007, the major modernization plan announced by the GLD in 2005 had started to bring logistics in the PLA up to the expected level of a modern military force. By the end of 2009, the PLA was able to conduct sustained independent operations outside China's borders—an activity it had never been able to undertake before. The PLA has finally acknowledged that logistics, Zhi chi, is the key force multiplier and should never again be the "poor cousin."

Dr. Martin Andrew retired from the Australian Defence Force in 2005 after 28 years of service. He has a Doctor of Philosophy degree from Bond University and has been a research affiliate at Harvard University. The second edition of his book, How the PLA Fights: Weapons and Tactics of the PLA, was published in September 2009.

²⁵ "Zhanchang yidong zhuangjia husuo — wuzhang yanshida xinxing judaishi jiuhuche," *Tanke Zhuangjia Cheliang*, 2004 Niandi, 11 Qi, Zhongdi 225 Qi, pp. 5–9.

²⁶ Liu Gengwu and Hu Guangsheng, "Wenshan Military Sub-Command issues medicine kits to frontier officers and men," *PLA Daily On-line*, 16 September 2005, <http://www.chinamil.com.cn>, accessed on 17 September 2005.

²⁷ Zhang Xinzong and Tang Xiangdong, "Integrated Army-Civilian Procurement System Built in Northeast China," *PLA Daily On-Line*, 26 September 2005, <http://www.chinamil.com.cn>, accessed on 26 September 2005.

²⁸ Ibid.

²⁹ "China to Launch Special Rectification on Administration of Military Uniform," *China Military Online*, 6 November 2009, <http://eng.chinamil.com.cn/news-channels/china-military-news/2009-11/06/content4075405.htm>, accessed on 8 November 2009.

Planners Hold Rehearsal of Concept Drill for Next Phase of Iraq Drawdown

Logistics planners gathered at Camp Arifjan, Kuwait, on 14 December 2009 for a rehearsal of concept (ROC) drill to discuss strategies and coordinate the next phase of the Iraq drawdown, which began in December 2009 and will conclude this August. The ROC drill was cohosted by senior staff from the Department of Defense, the Third Army, and the 1st Theater Sustainment Command (TSC) and included briefings on withdrawal timelines for specific units, classified plans for ammunition, weather predictions, and threat trends.

Stakeholders including the Army Materiel Command, the Defense Logistics Agency, Joint Contracting Command Iraq/Afghanistan, and the Department of the Army were represented at the meeting.

RECENTLY PUBLISHED

Army Training and Doctrine Command Pamphlet 525-3-0, The Army Capstone Concept, overhauls the 2005 Army Capstone Concept based on lessons learned in the past 4 years of operations in Iraq and Afghanistan. This document is subtitled “Operational Adaptability: Operating under Conditions of Uncertainty and Complexity in an Era of Persistent Conflict (2016–2028).” Released in December 2009, the concept examines how Soldiers operate under complex conditions and in a time of continuing conflicts and how they will fight wars in the future.

Sustainment operations are addressed significantly in this document, making it a must-read for sustainment community members. The concept explains that while future developments in vehicle reliability, fuel efficiency, and durability, as well as the development of unmanned vehicle technology, could reduce sustainment demands, the sustainment tasks that remain will be more difficult to complete, because of increasing operations in locations without well-established supply routes.

The Army will need to acquire new capabilities to ensure delivery of supplies and will have to work jointly to ensure an “uninterrupted flow of personnel, supplies, equipment, and units into and throughout the theater of operations.” Logistics support will also have to be decentralized “to ensure that forces have what is necessary to seize upon unexpected opportunities or protect against unanticipated dangers.” Furthermore, while the Army will continue to use contract support, “forces must retain the capability to sustain operations in unsecure, austere environments.” Though logisticians must maintain their skills, the document also emphasizes the need for Soldiers to be “warfighters first and logisticians second.”

According to information provided by planners at the ROC drill, the Army is on its way to fulfilling President Barack Obama’s goal of having less than 50,000 troops in Iraq by August 2010.

Lieutenant Colonel Eric Reinkober, 1st TSC mobility branch chief, says that the Army is ahead of schedule for its monthly retrograde goals for stock items and containers. As of December, the Army had been moving out 300,000 containers per month. Reinkober said that more transportation assets will be needed as further drawdown operations take place.

“The central question everyone wants to know is, do we have the transportation capacity to move the requirement?” said Reinkober. He explained that if additional vehicles are needed to move the requirement, the 1st TSC will need to contract additional trucks to haul equipment back to ports.

Since May 2009, more than 76,000 equipment items and 10,000 vehicles have been retrograded; more than 30,000 of those retrograded items are now filling other U.S. Central Command requirements.

New Task Force and Special Office Created to Oversee Equipment Drawdown in Iraq

The Army Materiel Command (AMC), the executive agent for resetting the Army, has set up the Responsible Reset Task Force (R2TF) to oversee Army equipment leaving Iraq as part of the drawdown scheduled to be completed by 2011. R2TF will ensure the visibility, accountability, and prompt movement of assets as they head for reset and refurbishment.

The Communications and Electronics Command Life Cycle Management Command has also created a new organization to aid drawdown efforts. The Special Project Office is working with R2TF to drawdown and move command, control, communications, computers, intelligence, surveillance, and reconnaissance equipment and personnel in Iraq.

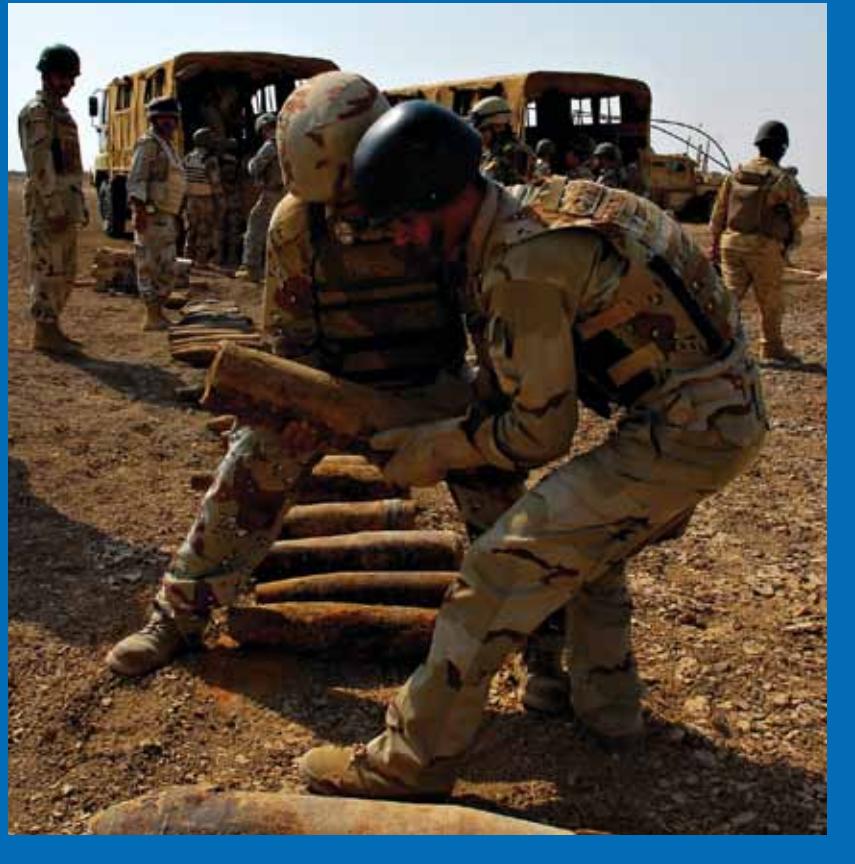
AMC’s asset-visibility and accountability efforts in the past few years have eased some of the burden associated with the drawdown of equipment. As of 11 November 2009, the Army had identified some 60,000 pieces of equipment, including trucks, trailers, and containers, to be moved out of Iraq and 22,000 items to be repositioned within the U.S. Central Command area of responsibility.

DLA Prepares for Drawdown

The Defense Logistics Agency (DLA) is already seeing a surge of activity due to drawdown efforts in Iraq. DLA provides the U.S. military and its allied forces with logistics, acquisition, and technical services—including the disposal or redistribution of excess military property and the disposal of hazardous waste. Earlier this year, members of DLA’s Defense

Iraqi and U.S. Army Partner to Destroy Old Munitions Near Baghdad

The 704th Explosive Ordnance Disposal Team and soldiers from the 9th Iraqi Army Division destroyed 1.5 tons of old munitions, including mortar shells and tubes, rocket-propelled grenades, and Russian-made anti-tank grenades, on the Besmiayah Range Complex near Baghdad on 26 October. The partnership is one of many across Iraq in which Iraqi soldiers are learning the skills needed to support the Iraqi Army. (Photo by SPC Philip Turner, Multi-National Division-Baghdad PAO)



Reutilization and Marketing Service disposal team removed more than 3 million pounds of scrap from a large forward operating base in 30 days in support of the drawdown effort.

"This is much more than moving a mountain," said Colonel Mike Bird, commander of Defense Logistics Agency-Central Command. "It surpasses any logistical challenge we have undertaken to date, all while we are still fighting two wars."

While equipment needs are decreasing in Iraq, they are building in Afghanistan, and a lot of consumable items are being shipped from Iraq to Defense Distribution Depot-Kuwait for redistribution. While consumable items can be used easily in Afghanistan, Donald Bruce, DLA's Joint Logistics Operations Center lead planner for drawdown, retrograde, and reset, says equipment is a more complex issue. High-mobility multipurpose wheeled vehicles and other items

in need of retrograde must return to Army repair depots.

"There's a big impact there for DLA because there's a lot of equipment that has to come back and be repaired before it can be provided to units to prepare for the next fight," said Bruce.

The transfer of equipment to repair depots creates an additional impact on DLA because it increases the agency's requirement to supply the repair parts to rebuild equipment. DLA's supply centers are expected to see a surge in business as the military's requirements for reset and refurbishment change and grow.

Rapid Port Opening Elements Join SDDC

The Army has added three rapid port opening elements (RPOEs) to the Military Surface Deployment and Distribution Command (SDDC) to provide expeditionary support for initial port setup. These units are designed to arrive before deploying units and equipment to ensure accountability and visibility once assets arrive. This is especially important in contingency operations when larger sustainment units are not yet available. While it can take a theater sustainment command a month to deploy in

support of port opening and forward distribution, RPOEs can be ready within 36 hours because they are tailored to the size and type of each mission.

The 688th, 689th and 690th RPOEs act as the "on the ground" elements for the U.S. Transportation Command's Joint Task Force-Port Opening and deploy as part of a joint expeditionary logistics force to set up a port of debarkation and a forward distribution node. RPOEs provide commanders with in-transit visibility, conduct clearance and distribution operations, and receive and transload cargo as an initial-entry port opening force. RPOEs continue to perform these duties until they are relieved by or integrated into follow-on sustainment forces.

The 690th RPOE, the newest of the three units, was activated on 16 October 2009. The 688th completed the task force's air and sea port of debarkation verifications in May 2009, and the 689th participated in its first operational deployment with the task force

while moving the 5th Stryker Brigade Combat Team, 2nd Infantry Division, to Afghanistan in the summer of 2009.

These units provide not only a quick-reaction capability but also can augment deployment and distribution units more readily because the task force design requires less coordination with higher headquarters elements to authorize deployment.

Army Command and General Staff College Names Distinguished Master Logistian

The Department of Logistics and Resource Operations of the Army Command and General Staff College (CGSC) recognized Major Erik E. Hilberg, a Logistics Corps and transportation officer, as the Major General James M. Wright Distinguished Master Logistian for Intermediate Level Education class 2009–02.

The Distinguished Master Logistian program began in 1983 and recognizes the top logistian in each CGSC class. The program provides expanded learning opportunities in logistics through a 3-phase process: a written exam on a wide variety of sustainment-related subjects; an oral exam before a board of logisticians, who ask scenario-based questions; and a 3-hour oral presentation. For the presentation, each candidate is given 7 days to develop a joint task force concept of support for operations in a country with minimal support infrastructure and then presents his support plan before a board of senior logisticians.

Soldiers in Afghanistan Get Letters Delivered Faster With New HooahMail

The Army launched a new 1-year pilot program on 1 December 2009 that is proving capable of delivering paper letters and photos of friends and family to Soldiers in Afghanistan within days instead of weeks. In its first 21 days in service, “Hooahmail” delivered 1,690 letters to Soldiers in Afghanistan, many in less than 24 hours.

Hooahmail is a hybrid system combining the benefits of digital and traditional mail. Individuals wishing to send letters and photos sign into www.hooahmail.us, type in their messages, and attach digital photos. This information is sent to 1 of 10 sites in Afghanistan, where it is printed out, folded, stuffed in envelopes, and delivered via intratheater mail using the Soldiers’ traditional mailing addresses.

Depending on the destination, Hooahmail can take 1 to 4 days to deliver, much less than the approximately 14 days it now takes mail from the United States to reach Soldiers. Service for HooahMail is provided by SuperLetter.Com, Inc., which has developed a similar program for the Marine Corps.

UPCOMING EVENTS

Operations Research Education Colloquium

The Military Operations Research Society (MORS) 2010 Education and Professional Development Colloquium will be held from 14 to 15 April 2010 at the Army Logistics University at Fort Lee, Virginia. The theme for this year’s forum is “Operations Research: A Global Solution Methodology.”

The forum provides operations research students and professionals with an opportunity to hear about recent academic projects and future research and professional development opportunities in operations research. Students will also be able to present current research projects, interact with students from other academic institutions, and receive guidance and lessons learned from experts in operations research.

For more information or to register, visit the MORS website at www.mors.org.

Culture Summit IV

The Army Training and Doctrine Command (TRADOC) Culture Center will hold Culture Summit IV from 19 to 21 April at the Hilton El Conquistador in Tucson, Arizona. The summit brings together military leaders, scholars, and other professional experts to provide participants with relevant, applicable lessons learned for building cross-cultural knowledge to use in the current operational environment. This year’s theme is “Knowledge to Application: Employing Cross-Cultural Competency Skills to Positively Shape the Environment.”

Major General John Custer, commanding general of the U.S. Army Intelligence Center of Excellence, says Soldiers deployed to foreign nations who understand the local language and are more culturally aware of their surroundings offer more complete reporting capabilities than Soldiers without this skill set.

Culture Summit IV will include presentations on the roles played by cultural awareness, non-governmental organizations, and diplomacy in the current operational environment. To register, visit the Intelligence Knowledge Network online at <https://icon.army.mil/>. Select “Culture Awareness Summit IV” in the bottom left column of the screen, and log in to the registration site using your Army Knowledge Online (AKO) user name and password. Guests without an AKO account can access the site with the user name “TccSummit.guest” and the password “2010TccSummit” in order to register. Registration ends April 2.

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